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A Study on Learning Difficulties in Mathematics at Upper Primary Level of Students residing in Slums of Maharashtra

PAC Code 16.02

(2018-19)

Dr. Ashwani Kumar Garg
Assistant Professor of Mathematics
&
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REGIONAL INSTITUTE OF EDUCATION
(National Council of Educational Research and Training)
Shyamla Hills, Bhopal- 462002

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PREFACE

To teach Mathematics is a very challenging task. Teachers need to develop their knowledge and skills on the pedagogical techniques. The teacher should keep him/her self abreast with the recent development in this subject to make it joyful and interesting. A good teacher can create the right environment for learning mathematics. It should be imparted through skillful techniques where the learners can fully participate and learn Mathematical concepts or rules in a spontaneous manner. The teachers should adopt such strategies that would make the subject interesting, meaningful and applicable in real life situations.

The study was undertaken with five objectives. The first objectives was to find out the achievement level in Mathematics at upper primary level of students residing in slums of Maharashtra, the second was to identify the specific problems faced by the children in learning Mathematics at upper primary level of slum areas and their causes, the third was to analyze the types of process mistakes committed by students residing in slums during Mathematics process, the fourth was to study the distracter-wise analysis of responses given by students during Mathematics process and the fifth was to assess the effectiveness of classroom teaching-learning of Mathematics of students residing in slums schools in Maharasta state. On the basis of these objectives this study was conducted on the selected sample of upper primary school children residing in slum areas of Maharashtra.

It is hoped, the findings of the study will offer possible solutions which will prove useful to upper primary teachers as well as teacher educators and help them in improving students' performance in mathematics at upper primary level. Suggestions which will improve future research in this direction are welcome.

Bhopal,
Dated: 26/03/19

Principal Investigators

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I am also expressing my thanks to the Academic and Administrative staff of RIE, Bhopal for providing logistic support. I am thankful to our Junior Project Fellow for putting their best towards timely completion of the study.

It is hoped that the research report will have a positive impact on teaching and learning of mathematics at upper primary level in the western states as well as in other part of the country.

Bhopal, Dated: 26/03/18

Dr. Ashwani Kumar Garg

&

Mr. Aji Thomas

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Chapter: One

Introduction

1.1 Background of the study:

'Education for all' is one of the cherished goals of our constitution. Since independence, lot of efforts are made to universalize education and to a large extent we are successful also in achieving the required goal of universalization of elementary education in our country. Elementary Education, being the base of all other ladders, occupies prominent place in the whole educational setup. With all this special attention was paid to the extension and spread of Elementary Education after the Independence. Section 45 of the Constitution of India and its later amendments also made a provision of free and compulsory education to all children within a period of 10 years from the commencement of the Constitution. Right to education, further, abolishes child labor and promotes education. The overall goal is to provide free and compulsory education of better quality to all children.

India has seen a lot of growth in the elementary school education system, these accounts for proper school management system and community participation to improve the quality of education.

According to Delor's report on education, through education, one learns to know, learns to do, learns to be and learns to live together. This paves way to acquisition of knowledge, skills and values to form habits and beliefs. Education aims at reflecting the current needs and aspirations of the society and its values. The immediate concern of a community is to build a cohesive society with commitment to practice and demonstrate values which are based on reasoning and understanding of the school going children. Different subjects are taught at elementary education level, out of which mathematics is one such subject.

Teaching learning of mathematics as a subject in school system is the foundation of children. The Journey of education of mathematics starts from pre-nursery stage. Every child in school study mathematics to develop mathematical skills required throughout their life.. Mathematics is engrained in the Indian history from the discovery of zero to modern mathematics. Historically, in contemporary education system, elementary mathematics was the integral part of the education since the ancient civilization because of applicability of mathematical concepts in the life of humans on day-to-day basis.

The basic numeracy skills such as counting numbers, counting money and observations of time are essential in one's life. Mathematics in its most basic form has been man's faithful companion and helper right from the beginning of human existence on this earth. When man first wanted to answer the questions like: "How many? How much? How big? etc." Thus, mathematics was born. Later, Algebra devised to simplify arithmetical components and geometry came in for measurement and forms or shapes. Trigonometry came into existence when man wanted to find the position of high mountains and stars. With these facts, we must consider that if we remove mathematics from our daily life then the civilization as a whole will crumble down. It plays crucial role not only in the advancement of civilization but also in the development process of the country. Mathematics helps in problem-solving and decision-making through its applications to real life situations in familiar as well as non-familiar contexts.

Mathematics is a quantitative subject that fosters the development of cognitive abilities such as thinking (Shaffer, 2001). Reasoning skills are important for success in mathematics and other subject's students study in schools. Mathematics,

particularly, is a base for all scientific and technological studies. Additionally, mathematics has high relevance and practical applications to many real-life situations and problems. It is therefore, a key and compulsory subject in all schools. It not only helps in our day-to-day situations, but also develops logical reasoning, abstract thinking and imagination. It enriches life and provides new dimensions to thinking.

Learning mathematics is not only about remembering solutions or methods but is a skill to solve problems. Mathematical skills are therefore indispensable in one's day-to-day life and planning. Right from the most ordinary to the most extraordinary citizen, everyone has mathematics in his/her life. It has helped us in reaching the moon and paved way for solving mysteries of nature. The entire galaxy is surcharged with the inevitable power of Mathematics. So, mathematics has been regarded as the most international of all curriculum subjects and it is regarded as an un-dispensable tool of practical utility and also as essential element of intellectual equipment of every cultured person.

Mathematical understanding influences decision making in all areas of life—private, social and civil. The mathematical principles of deductive, inductive, equations, proofs and problem solving apply nearly in all the subjects. It is merged so deeply with business subjects that a separate branch has emerged in the name of commercial mathematics. Statistics a division of mathematics is studied in all the subjects and disciplines. Trigonometry a branch of mathematics is widely applied in calculation of heights and distances in geography. Thus, physical, biological or social sciences including the business subjects depend on mathematics for their analysis and interpretation. That's why the mathematics is a compulsory subject of general education up-to the secondary level.

1.02 Mathematics Education in various Indian committees and commissions :
Mathematics education has found its place in various committees and commissions before and after independence.

In 1937, once Mahatma Gandhi propounded the thought of basic education, the Zakir Husain committee was appointed to elaborate on this concept. It recommended:

'Knowledge of mathematics is an important part of any information. Each child is anticipated to figure out the normal calculations needed within the course of his craft work or his personal and community issues and activities'.

The Mudaliar Commission (1952) popularly known as secondary Commission additionally emphasized the requirement for mathematics as an obligatory subject within the faculty.

Later on National Policy on Education, NPE (1968) emphasized the important place of mathematics education at elementary stage.

Further, in line with the recommendations of the National Policy on Education, 1968, National Council of Educational Research and Training (NCERT), New Delhi came out with its document "Curriculum for the Ten-Year School". It remarked that the appearance of automation and information science during this century makes the start of the new scientific-technological revolution and makes it the entire additional imperative to devote special attention to the study of mathematics. It stressed on an *'investigatory approach'* within the teaching of mathematics.

The National Policy on Education, 1986 went further;

Mathematics is ought to be pictured because of the ability to assume, reason, analyze and to articulate logically. Except for being a selected subject, it ought to be treated as a concomitant to any subject involving analysis and reasoning. The National Curriculum Framework for School Education (NCFSE , 2000) document echoes such sentiments furthermore.

National Curriculum Framework (2005) while emphasizing on the significance and nature of mathematics in its curriculum framework, 2005 position paper on teaching of mathematics at upper primary stage mentioned:

"Mathematics is amazingly comprehensively: one way struggle a lot, work out something, perhaps by trying many methods. But once it is understood, and seen as a whole, it can be filed away, and used as just a step when needed. The inside that goes into this compression is one of the great joys of Mathematics. A major goal of the upper primary stage is to introduce the student this particular pleasure.

The compressed form lends itself to application and used in a variety of context. Thus, Mathematics at this stage can address many problems from everyday life and offer tools for addressing them. Indeed, the transition from arithmetic to algebra, at once both challenging and rewarding, is best seen in this light."

However, despite this history of exhortations, mathematics education has remained just about an equivalent, targeted on attenuated aims. This state of affairs of mathematics education signifies for concrete deliberate efforts to form teaching-learning of mathematics attention-grabbing in lecture rooms for higher learning of scholars. New ways of teaching are to be devised for mathematics

1.03 Teaching-Learning of Mathematics: The Indian Scenario:

Teaching is a triadic relation and tri-polar process involving the source of teaching, student and a set of activities and manipulation to bring changes in the behavior of the students. 'Effective teaching' demands various integrated activities in teaching-learning system. There is no single, universal approach that suits all situations. Therefore, effective teachers use an array of teaching strategies according to the needs.

Different strategies are used in different combinations with different groups of students to improve their learning outcomes. Some teaching strategies are better suited to teaching certain skills and fields of knowledge than are others. Some strategies are better suited to certain student backgrounds, learning styles and abilities.

In spite of Mathematics education being a key to increasing the post-school and citizenship opportunities of young people, today, many students struggle with mathematics and become disaffected as they continually encounter obstacles to engagement.

1.04 Learning Difficulties in Mathematics:

It is a known fact that understanding of mathematics is actively constructed by each learner in their own ways. Many times, these Students face difficulties in understanding and applying the mathematics in different situations. It is seen those students who struggles with mathematics learning show following characteristics:

- Demonstrate slow or inaccurate recall of basic arithmetic facts

- Answer problem impulsively, without inhibition
- Have difficulty representing mathematical concept mentally
- Have poorly developed number sense and
- Have difficulty keeping information in their working memory

Learning difficulty (LD) is one of the four non-traditional categories of disabilities. The others are emotional disorders (ED), emotional and behavioral disorders (EBD), and those at-risk (AR) of developing dysfunctional behaviors. LD is the largest disability and category of special and inclusive education (Geary, 1999) followed by EBD. Previous research indicates that the incidence of LD has been on the increase since 1976 (Garnett, 1998). Both LD and EBD have a wide range of subtypes caused by a variety of factors. The source of causes for LD may be the environment (e.g. unsatisfactory and harmful teaching, poor and inadequate learning resources, depressed interest or complete lack of interest in learning, deficiencies in intrinsic and extrinsic motivation, unsupportive and un-conducive home environment, high anxiety, attrition or poor school attendance, and so on). The students may have low self efficacy and selective attention difficulties (Gross Tsur, Manor, & Shalev, 1996). Sometimes the causes are biological (e.g. damage to the brain through injury, toxins, disease, or interference by cancerous tumors and blood clots which might impair various executive functions such as memory, cognition, language, vision, hearing, and motor ability.

The many manifestations of LD can, however, are put into two main groups relating either to literacy (dyslexia) or numeracy (dyscalculia). The two conditions have linguistic connections such that students with dyslexia who have difficulty

with mathematics are sometimes misdiagnosed as having dyscalculia because of the inability to use alphanumeric symbols and retain them in memory (Wright, 1996; Bull & Johnson, 1997; Geary, 2001). Individuals display a mathematics learning disability (LD) when their performance on standardized calculation tests or on numerical reasoning tasks is significantly depressed and comparatively low, given their age, education and intellectual reasoning ability (Heward, 1996; Kaufman & Lichtenberger, 1999; Sattler, 2001; Munro, 2003). However standardized assessments need to be supplemented by continuous educational assessments (Somerset, 1987; Taylor, 2003) as well as informal or authentic assessments to continuously monitor and confirm the learner's progress (Engelbrecht et al., 1993). The discrepantly low performance due to cerebral trauma is called acquired dyscalculia (AD) while mathematical learning difficulties with similar features but without evidence of cerebral aberration are referred to as developmental dyscalculia (DD) (Kosc, 1974; Hughes, Kolstad & Briggs, 1994; Munro, 2003).

Developmental abnormalities in both cerebral hemispheres can lead to many AD complications (O'Hare, Brown & Aitken, 1991). According to Munro (2003) the right hemispheric dysfunction leads to difficulties in understanding the properties of quantities, spatial learning problems (for example, understanding and using place value) and using arithmetic knowledge to solve real life problems while the left hemispheric dysfunction leads to difficulty in comprehending the abstract meanings of numbers, sequencing numerically and mathematics operations. DD is the broadest category of dyscalculia.

1.05 Need and importance of the study:

One of the major objectives of teaching mathematics is to enable children to keep both speed and accuracy in mathematical operations. Teaching of mathematics in the class is not only concerned with the computational knowledge of the subject but is also concerned with the selection of the mathematical content and communication leading to its understanding and application. The main goal of mathematics education in schools is to stimulate analytical thinking process of the children. Clarity of thoughts and pursuing assumptions to logical conclusions is central to the mathematical enterprise. So while teaching mathematics one should use the teaching methods, strategies and pedagogic resources that are much more fruitful in gaining adequate responses from the students than we have ever had in the past.

The teaching and learning of mathematics is a complex activity and many factors determine the success of this activity. The nature and quality of instructional material, the presentation of content, the pedagogic skills of the teacher, the learning environment, the motivation of the students are all important and must be kept in view in any effort to ensure quality in teaching-learning of mathematics. The numerical and spatial problems which they encounter at home, in the school and in the community can be used as examples to inculcate practical concepts. Mathematics should help children in developing understanding of key mathematical concepts at each level through appropriate exercises with things from the physical world and environment. It should help children develop an understanding from the concrete to the abstract, from the specific to the general. The nature of mathematics teaching significantly affects the nature and outcomes of student learning.

It is widely believed and reported that the performance of students in Mathematics in the whole country in general and Maharashtra state in particular at Upper Primary level has not been satisfactory. Recent NAS data reports that achievement of students in mathematics at upper primary level in Maharashtra for class 8 is 40.50 % (Boys = 40% and Girls = 41%) only. The situation it is expected to be further worsed in slum areas of Maharashtra. This caused a great concern of various stakeholders of the education system. Lot of arguments and counter arguments are put forth. However, the actual reasons for this have not yet been scientifically explored. There is a need to look at the performance, causes of common mistakes committed and learning difficulties of students with a critical mind and assess them properly. This highlights the huge responsibility teachers have for their students' mathematical well-being.

It is imperative that we understand what effective mathematics teaching looks like—and what teachers can do to break learning difficulties of students. To achieve this, teachers must first demystify the subjects by the way they approach them. They need to use teaching methods that are capable of creating and maintaining students' interest and intrinsic motivation in the subjects. In terms of teaching, the use of language that is suitable to the level of the learners is highly recommended (Kalisk, 1979). Teaching methods should also involve students to learn things practically through activities or manipulations done preferably collaboratively (Dodd, 1992). Pro-social teaching and learning methods are desired to increase interaction and minimize isolation (Dodd, 1992). In some cases, team teaching is necessary if a regular teacher needs help from a specialist. More training is highly desirable to increase the teachers' knowledge skills and confidence in order to handle learning difficulties students' face.

1.07 Objectives of the study:

The major objectives of this study were:

1. To find out the achievement level in Mathematics at upper primary level of students residing in Slums of Maharashtra.
2. To identify the specific problems faced by the children in learning Mathematics at upper primary level of slum areas and their causes.
3. To analyze the types of process mistakes committed by students residing in slums during Mathematics process.
4. To study the distracter-wise analysis of responses given by students during Mathematics process.
5. To assess the effectiveness of classroom teaching-learning of Mathematics of students residing in slums schools in Maharasta state.

1.08 Research questions:

The following research questions were formulated for this study-

1. What is the achievement level in Mathematics at upper primary level of students residing in Slums of Maharashtra?
2. What types of specific problems are faced by the children in learning Mathematics at upper primary level of slum areas and their causes?
3. What types of process mistakes committed by students residing in slums during Mathematics process?
4. What types of distracter-wise analysis of responses given by students during Mathematics process?
5. What types the effectiveness of classroom teaching-learning of Mathematics of students residing in slums schools in Maharashtra state.

1.09 Chapterization of the study:

The report of the whole study was distributed in five chapters. Chapter-wise distribution of the contents of the report is given below:

Chapter- I contains the background of the study and recommendations of different commissions and committees with a focus on mathematics education

Chapter II is related to the Profile of the Study Area.

Chapter III is related to the methodology of the study. Under methodology, the detailed research design regarding this study was documented.

Chapter IV presents data presentation, interpretation part is deals with the inferences, conclusion, discussion of findings and recommendations of the study and it also deals with the data analysis and interpretation.

Chapter V presented the executive summary of the research report.

Chapter: Two

Profile of the Study Area

2.01 Maharashtra - A state of India

India is comprised of 29 states and 7 Union Territories. Maharashtra is area wise one of the biggest states of the country with Mumbai and Nagpur as two capitals of the state. Maharashtra is a state in the western region of India. It is the second-most populous state in India. Spread over 307,713 km^2, it is bordered by the Arabian Sea to the west, the Indian states of Karnataka and Goa to the south, Telangana and Chhattisgarh to the east, Gujarat and Dadra and Nagar Haveli to the north west, and Madhya Pradesh to the north. It is also the world's second-most populous sub national entity. Maharashtra is the third-most urbanized state of India. Maharashtra consists of six administrative divisions: Amravati, Aurangabad, Konkan, Nagpur, Nashik and Pune. The state's six divisions are further divided into 36 districts, 109 sub-divisions and 357 talukas.

Maharashtra is the wealthiest state by all major economic parameters and also the most industrialized state in India. The state continues to be the single largest contributor to the national economy with a share of 15% in the country's gross domestic product (GDP) Maharashtra accounts for 17% of the industrial output of the country and 16% of the country's service sector output. The economy of Maharashtra is the largest state economy in India with ₹27.96 lakh crore in GDP and a per capita GDP of ₹180,000.

2.02 Profile of Mumbai

Mumbai, also called Bombay, is one of the capital cities of the state of Maharashtra in India, and it's the most populous city in India. As the 4th most populous city in the world and one of the populous urban regions in the world, Mumbai has a metro population of about 20,185,064 in 2019. According to the most recent census conducted in India during 2011, Mumbai's Urban Agglomeration is at 20,748,395, while the city itself was recorded at 12,478,447. The population density of Mumbai is approximately 73,000 per square mile, which makes Mumbai one of the most densely populated cities in the world. Because land is at such a premium, residents of Mumbai frequently live in cheap, cramped housing far from work, leading to long commutes on the city's busy mass transit system.

The total surface area that the city of Mumbai covers comes to 603 kilometers squared (233 square miles) in the megacity itself. The major metropolitan area has a total surface area of 4,355 kilometers squared (1,681.5 square miles). The population of Mumbai has more than doubled since 1991, when the census showed that there were 9.9 million people living in the area. The rapid expansion has led to serious health issues that have to be addressed by the government, and By 2030, Mumbai will have an estimated population of 28 million. These estimates mean that the 6th most populous city in the world would move up the list to become the 4th most populous.

Mumbai has experienced rapid growth over the past twenty years, which has led to an increased number of residents living in slums and has elevated the growth of its largest slum, Dharavi. The Malad-Dahisar region in the west and the Cembur-Govandi region in the east have grown the fastest, growing between 17 and 20% in the last 10 decades. A large percentage of residents live in the city's slums.

2.03 Slums of Mumbai

The number of people residing in slums throughout the entire country is estimated to be 104 million, or 9% of the total population of India. An estimated 6.5 million people, around 55 percent of Mumbai's total population, live in slums. In Mumbai, slums are notified or recognized by the government if they were settled on state or city government-owned land prior to 2000. The percentage of people living in slums is estimated to be as high as 42% in Greater Mumbai, meaning that over 9 million people live in these areas.

Dharavi is considered one of the largest slums in Asia. Dharavi is one of the most densely populated areas in the world. Dharavi has an area of just over 2.1 square kilometres (0.81 sq mi; 520 acres) and a population of about 700,000 with a population density of over 277,136/km^2 (717,780/sq mi).The Dharavi slum grew in part because of an expulsion of factories and residents from the peninsular city centre by the colonial government, and from the migration of poor rural Indians into urban Mumbai (then called Bombay).For this reason, Dharavi is currently a highly multi-religious, multi-ethnic, and diverse settlement. About 33% of the population of Dharavi is Muslim, compared to 13% average population of Muslims in India. The Christian population is estimated to be about 6%, while the rest are predominantly Hindus (60%), with some Buddhists and other minority religions. Among the Hindus, about 20% work on animal skin production, tanneries and leather goods. Other Hindus specialize in pottery work, textile goods manufacturing, retail and trade, distilleries and other caste professions - all of these as small-scale household operations. The slum residents are from all over India, people who migrated from rural regions of many different states. There are

approximately 5,000 businesses and 15,000 single-room factories in Dharavi. The slum is the most literate in the country, with a literacy rate of 69%.

In addition to the traditional pottery and textile industries in Dharavi there is an increasingly large recycling industry, processing recyclable waste from other parts of Mumbai. Recycling in Dharavi is reported to employ approximately 250,000 people. While recycling is a major industry in the neighborhood, it is also reported to be a source of heavy pollution in the area. The district has an estimated 5000 businesses and 15,000 single-room factories. Two major suburban railways feed into Dharavi, making it an important commuting station for people in the area going to and from work.

Dharavi exports goods around the world. Often these consist of various leather products, jewelry, various accessories, and textiles. Markets for Dharavi's goods include stores in the United States, Europe, and the Middle East. The total (and largely informal economy) turnover is estimated to be between US$500 million, over US$650 million per year, to over US$1 billion per year. The per capita income of the residents, depending on estimated population range of 300,000 to about 1 million, ranges between US$500 to US$2000 per year.

Besides Dharavi as one of the biggest slum area, slums are also spread over the other areas of Mumbai. Besides Dharavi some of the other areas where slums are noticed: Kamrajnagar, Sainath Nagar, Vikroli, Devnar, Vinobhabhave and Barvenagar .

Chapter: Three

Methodology of the Study

3.01 Introduction:

Systematic methodology helps to define detailed plan of an investigation. Keeping in view, nature and objectives of the study, appropriate methodology of investigation for the study was selected. In this chapter selection of sample, development of tools and techniques of data collection and procedure followed to conduct the study are discussed. Procedure of administering and scoring of the test and statistical technique s employed for analyzing the data were also detailed out in this chapter.

3.02 Research Design:

Research design is the actual blue print of the procedure for completion of various investigatory steps to reach the valid conclusions. The present study, a descriptive research, will employ survey method and will be both qualitative and quantitative in nature.

3.02.01 Population: All the upper primary schools students residing in slums of Maharashtra state constitute the population of the study.

3.02.02 Sample:

It is not possible in any single study to collect data from the whole population. Therefore, it is necessary to select a representative sample of the population. For conducting this study, Upper Primary students, residing in slums of Mumbai in Maharashtra state was selected based on various criteria.

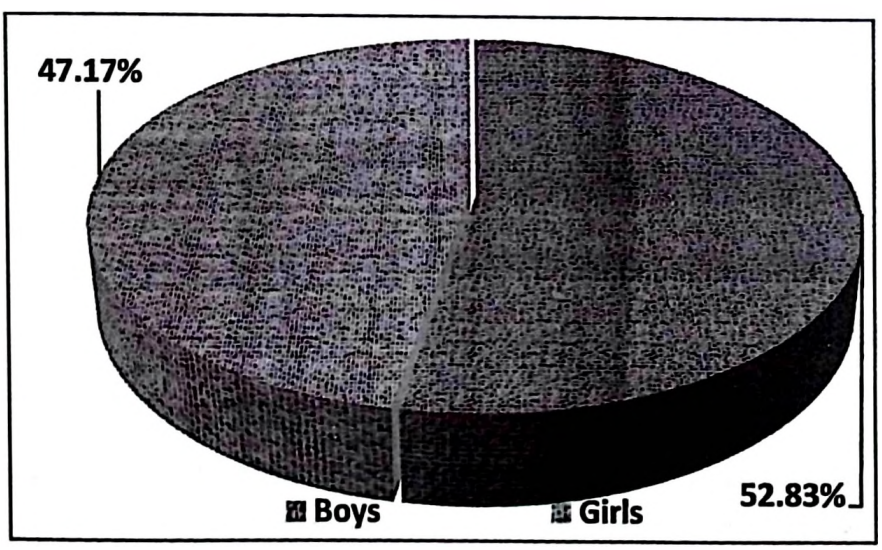
For the present study 9 upper Primary schools were selected on the consideration of randomness as well as purposive. One of the impoi'tant logic behind selection of these schools was logistic convenience and prior information about status of

mathematics learning in those schools. The detailed information of the sample size is given below in tabular form-

Sl. No	Medium wise Students	Class						Total		
		VI		VII		VIII				
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total
1	Hindi	78	78	98	89	78	66	254	233	487
2	English	53	47	52	54	51	46	156	147	303
3	Marathi	32	32	43	37	65	42	140	111	251
	Total	163	157	193	180	194	154	550	491	1041
Percentage		**50.90**	**49.01**	**51.70**	**48.30**	**55.70**	**44.3**	**52.83**	**47.17**	**100.00**

3.02.03 Characteristics of sample related for the study:

All the school selected from slums of Mumbai are with one or more medium of instruction. These schools have classes from class 6 to 8 also. As the purpose of present study was to work for upper primary level, therefore class 6, 7 and 8th students of different medium were selected as a sample. The total sample, thus, comprising of 320 students from class 6, 373 students from class 7 and 348 students from class 8, totaling to 1041 students from all the three classes. These 1041 students include boys and girls both. The ratios of boys and girls in the selected sample is presented in the following pie chart-



3.02.04 Tools Used:

Tools are the instruments with the help of which the data are gathered from the respondents for fulfillment of the research objectives. The tools must be appropriate and well constructed to achieve the research objectives. In the present investigation, the achievement test developed by the researcher in the workshop mode and classroom observation schedules were used for collection of appropriate data. The details of these two tools used in the study are given below-

(I) Students' achievement tests in mathematics:

The significant purpose of the present study was not only to find-out the achievement level in Mathematics but also to identify the learning difficulties in class 6, 7 and 8 students in mathematics, therefore it was necessary to have achievement test of the nature which is able to identify mathematics learning difficulties.

As the purpose of the study was to go into the depth of the learning difficulties therefore it was decided in the workshop that each question should not only attempt to know the correct answer but should also go into further details of process of arriving at answer he/she has given to know if any learning difficulties they are facing.

For developing he above achievement test, investigator prepared the draft question paper for classes 6^{th}, 7^{th} and class 8^{th}. Each class test for class 6, 7 and 8 were developed at two levels (Easy and difficult) for almost two third of the syllabus, keeping in mind the tentative completion of the content till the month of December. Each question was given a weight-age of 1 mark only.

After developing the question paper, investigator organised a five days workshop for vetting of tools with the help of SCERT Pune (Maharashtra) Resource Persons and Maharashtra state subject teachers. During the workshop investigator presented the developed question papers and after discussion and suggestion of resource persons, investigator finalized the question papers based final opinions of resource persons. Investigator also discussed the analysis process of said tools. Class wise tools are given in appendix.

(II) Mathematics Class room observation schedule for Mathematics teaching:

Classroom Observation schedule for observing classroom processes/teaching-learning processes of the mathematics was another important tool for the present study. This tool was prepared to cover following broad areas-

i. Students' participation in classroom and group activities
ii. Process of Thought provoking in Children
iii. Students ability to solve problems in mathematics
iv. Child centric approach being followed in Classroom
v. Use of ICT in Classroom Teaching-Learning process
vi. At the end of the class - lesson summarization process.
vii. Connecting chapter to Day-to-Day activities
viii. Games being given equal importance as studies

All the statements desired observations on implementation of the different parameters of classroom teaching-learning on three modes, 'to a great extent', 'to some extent' and 'not at all'. The statements were arranged in the schedule in a random manner to have cross validation of the situations. After initial development of the schedule, it was validated with the experts of the area for its correctness. The observation schedule so developed was with 35 statements covering the 7 parameters of the mathematics teaching-learning practices. The observation schedule is given in appendix.

3.02.05 Method of data collection:

After selection of sample schools, the investigator contacted the school authorities and explain them the objectives and scope of the study. Accordingly, a time schedule was fixed with the school administration. After getting the confirmation, investigator visited the schools with Junior Project fellows and administered the achievement test for the purpose it was developed. To have data regarding the classroom transaction in mathematics in real situation, the researcher along with JPFs also observed the mathematics classroom transactions with the help of class room observation scheduled developed for the purpose. Where-ever was possible other contextual factors like nature of the teacher, his/her relation ship with student etc., associated with mathematics teaching of students of class 6, 7 and 8^{th} were also noted by the researcher.

3.03 Data Analysis:

The data obtained through administration of the tools was classified, tabulated and presented in various forms – tables, diagrams, etc. On the basis of various criterion variables, scores were obtained for the dependent and independent variables for achieving the following purposes-

- Performance level of students in mathematics
- Type of mathematical problems faced by the students.
- Reasons responsible for such problems.

Classification of learning difficulties/problems of students of different levels were analyzed in following heads-

1. Procedure problems
2. Understanding problems
3. Computational problems

4. Conceptual problems
5. Accidental/Incidental problems
6. Not Attempted at all
7. Fully Correct

Quantities analysis was attempted using simple descriptive statistical techniques such as averages; percentages, Mean, Standard deviation, ANOVA etc.

3.04 Stages of Research Study:

The study has been carried out in the following phases:

1. In the first phase, related literature and research studies were studied and reviewed.
2. In the second phase, the tools for study – class wise achievement test and observation schedule were constructed and validated in the workshop mode.
3. In the third phase the collection of data from the selected schools of slums of Maharashtra has been carried out with the help of above developed tools mentioned at point 2 above.
4. In the fourth phase the collected data from the sample were analyzed using the appropriate descriptive and inferential statistical techniques like ANOVA, etc.
5. In the fifth phase the report was prepared

3.05 Delimitations of the study: The limitation of the study was following-

This study focused to know the level of performance, learning difficulties and types of problems faced by students in Mathematics at Upper Primary level. For this study only Mumbai slums upper primary schools were selected.

Chapter: Four

Data Interpretation and Discussion

4.01 Introduction:

Data collection through appropriate tool, though an important step in research, does not lead to arriving at appropriate conclusions until and unless it is properly analyzed with the help of appropriate data analysis technique. This data analysis technique depends on the variety of factors such as nature of data, size of the sample etc. It is the data analysis which transforms data in to knowledge passing through the process of information. In the present chapter objective wise analysis of data is given. Efforts are also made to arrive at conclusions based on the data analysis.

4.02. Data Analysis: The researcher analyzed the data according to objectives. The objective wise analysis is given below-

Objective 4.02.01: To find out the achievement level in Mathematics at upper primary level of students residing in Slums of Maharashtra.

4.02.01.01: INFLUENCE OF GENDER, CLASS, MEDIUM AND THEIR INTERACTION WITH ACHIEVEMENT IN MATHEMATICS OF STUDENTS AT UPPER PRIMARY LEVEL RESIDING IN SLUMS OF MAHARASHTRA .

The first sub objective was to study the influence of Gender, Class, Medium and their interaction with achievement in mathematics of students at upper Primary level residing in slums of Maharashtra. Male and female were the two levels of gender; class 6, class 7 and class 8 were three levels of class while Hindi, English

and Marathi were the three levels of medium. So the data were analyzed with the help of 2 × 3 × 3 Factorial design ANOVA and the result are given in table 4.2.1.

Table 4.2.1

Summary of 2 × 3 × 3 Factorial design ANOVA of achievement in Mathematics of students at upper Primary level residing in slums of Maharashtra

Source of Variance	Degree of Freedom	Sum of square	Mean sum of square	F-value	Level
Gender(A)	1	142.49	142.49	2.60	NS
Class(B)	2	4226.71	2113.35	38.53	**
Medium(C)	2	13652.53	6826.26	124.45	**
A×B	2	1043.89	521.95	9.52	**
A×C	2	424.75	212.38	3.87	*
B×C	4	5026.21	1256.55	22.91	**
A×B×C	4	1195.00	298.75	5.45	**
Error	1023	56113.22	54.85		
Total	1040	421495.00			

** Significant at 0.01 level, * Significant at 0.05 level and NS Non Significant

The 'F' value for gender is 2.60 which is not significant (Vide Table 4.2.1). It shows that the mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra do not differ significantly between boys and girls. Hence it can be inferred that there is no significant influence of gender on achievement in Mathematics at upper primary level of students residing in slums of Maharashtra

From table 4.2.1 the 'F' value for classes is 38.53 which is significant at 0.01 level. It shows that the mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra, belonging to different classes differ significantly. In order to know which group mean score of achievement in Mathematics of students differs significantly data were further analyzed with the help of 't' test and the results are given below

Table 4.2.1.1

Class wise Mean, Standard Deviation and 't' values of in Mathematics of students at upper Primary level residing in slums of Maharashtra

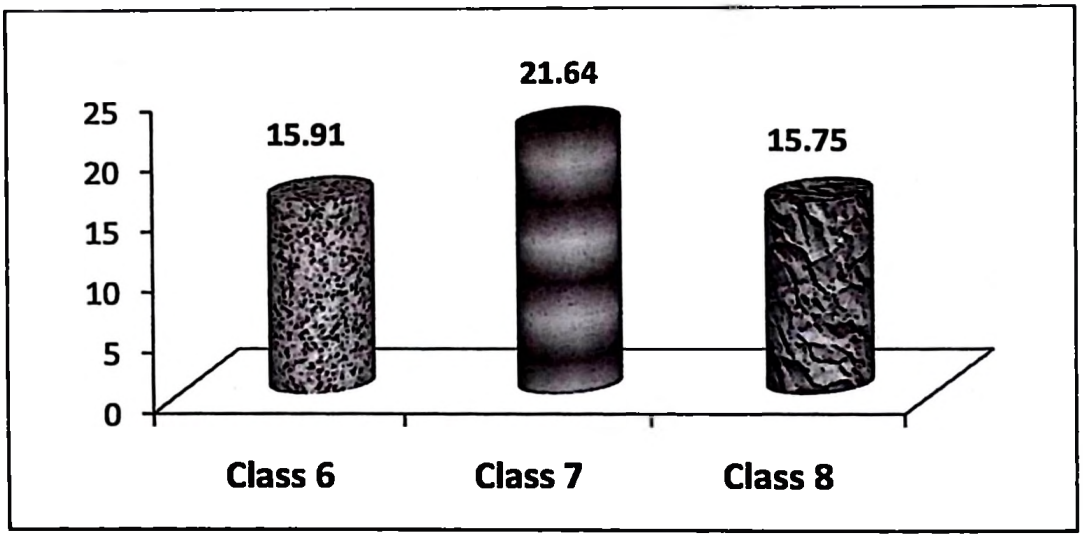
Class	Mean	Standard Deviation	n	Between Classes	't' Values	Degree of Freedom
6	15.91	8.86	320	6 and 7	8.40**	691
7	21.64	9.00	373	6 and 8	0.24	666
8	15.75	8.37	348	7 and 8	9.07**	719

** Significant at 0.01 level

From Table 4.2.1.1 it is evident that 't' value for class 6 and class 7 is 8.40 which is significant at 0.01 level (df = 691). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in class 6 and class 7 differ significant. Further the mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in class 6 is 15.91 which is significantly lower than those of class 7 whose mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra 21.64. Therefore it can be concluded that student studying in class 7 have significantly better achievement in Mathematics than those of class 6. Similarly 't' value for mean difference between class 7 and class 8 is 9.07 which is significant at 0.01 level (df = 719). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in class 7 and class 8 differ significant. But the means scores of achievement in Mathematics achievement at upper primary level of students residing in Slums of Maharashtra studying in class 6 and class 8 do not differ significantly neither at 0.01 nor at 0.05 levels.

The class-wise means scores of achievement in Mathematics are given in graphical form-

Graph No. 4.2.1.1 shown below also reveals the class-wise learning achievement of students in Mathematics of class 6-8



From table 4.2.1 the F-value for medium is 124.45 which is significant at 0.01 level. It reflects that the mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra belonging to different medium differ significantly. In order to know which group mean score of achievement in Mathematics of students differs significantly data were further analyzed with the help of 't' test and the results are given below-

Table 4.2.1.2

Medium wise Mean, Standard Deviation and 't' values of in Mathematics of students at upper Primary level residing in slums of Maharashtra

Medium	Mean	Standard Deviation	n		Between Medium	't' Values	Degree of Freedom
Hindi	22.01	9.19	487		Hindi and English	14.51**	788
English	13.36	6.09	303		Hindi and Marathi	9.30**	736
Marathi	15.45	8.81	251		English and Marathi	3.30**	552

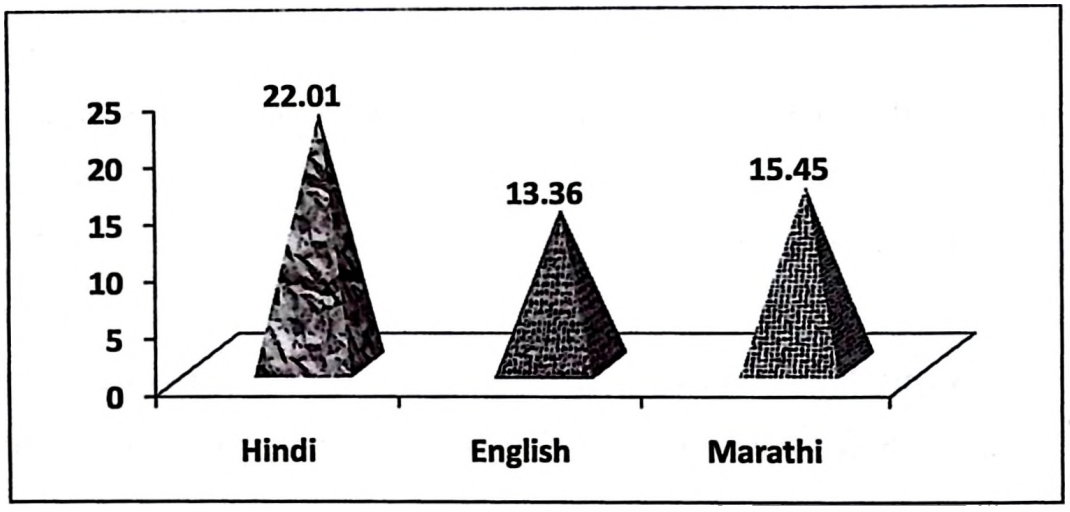
** Significant at 0.01 level, * Significant at 0.05 level

From Table 4.2.12 it is evident that 't' value for medium Hindi and medium English is 14.51 which is significant at 0.01 level (df = 788). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in Hindi and English medium differ significant. Further the mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in Hindi medium 22.01 which is significantly higher than those of English medium whose mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra 13.36. Therefore we said that student studying in Hindi medium have better achievement in Mathematics than those of English medium.

Similarly 't' value for English medium and Marathi medium is 3.30 which is significant at 0.01 level (df = 552). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in English medium and Marathi medium differ significant. So we said that student studying in Marathi medium (Mean Score=15.45) have better achievement in Mathematics than those of English medium (Mean Score=13.36). Similarly the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in Hindi medium and English medium differ significantly at 0.01 level (t = 9.30, df = 736).

The medium-wise means score of achievement in Mathematics are given in graphical form

Graph No. 4.2.1.2 shown below also reveals the medium-wise learning achievement of students in Mathematics of class 6 to 8.



The 'F' value (Table 4.2.1) of interaction between gender and class of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 9.52 which is significant (Vide Table 4.2.1) at 0.01 level. It reflects significant influence of interaction between gender and class on achievement in Mathematics at upper primary level of students residing in slums of Maharashtra.

The 'F' value (Table 4.2.1) of interaction between gender and medium of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 3.87 which is significant (Vide Table 4.2.1) at 0.05 level not at 0.01 level. It reflects significant influence of interaction between gender and medium on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.

The 'F' value (Table 4.2.1) of interaction between Class and medium of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 22.91 which is significant (Vide Table 4.2.1) at 0.01 level. It

reflects significant influence of interaction between class and medium on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.

The 'F' value (Table 4.2.1) of interaction between gender, class and medium of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 5.45 which is significant (Vide Table 4.2.1) at 0.01 level. It reflects significant influence of interaction between gender, class and medium on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.

Objective 4.02.01.02: INFLUENCE OF FAMILY OCCUPATION, MONTHLY INCOME, FAMILY SIZE AND THEIR INTERACTION WITH ACHIEVEMENT IN MATHEMATICS OF STUDENTS AT UPPER PRIMARY LEVEL RESIDING IN SLUMS OF MAHARASHTRA.

The second sub objective was to study the influence of family occupation, monthly income, family size and their interaction with achievement in mathematics of students at upper Primary level residing in slums of Maharashtra. Family occupation were categorized into three different categories viz. service, self business and labour; family monthly income is categories into three different levels based on monthly income (level-1 = monthly income less than 20000, level-2 = monthly income 20000 to 30000 and level-3 = monthly income 30000 and above) and family size divided into again three categories (category-1= family member <5, category-2 = family member > 4 and less than < 7 and category-3 = family member > 6) . So the data were analyzed with the help of $3 \times 3 \times 3$ Factorial design ANOVA and the result are given in table 4.2.2.

Table 4.2.2

Summary of 3 × 3 × 3 Factorial design ANOVA of achievement in Mathematics of students at upper Primary level residing in slums of Maharashtra

Source of Variance	Degree of Freedom	Sum of square	Mean sum of square	F-value	Level
Father Occupation (A)	2	286.56	143.28	1.77	NS
Monthly Income (B)	2	1157.33	578.67	7.16	**
Family Size (C)	2	38.33	19.17	0.24	NS
A×B	4	476.98	119.25	1.48	NS
A×C	4	380.23	95.06	1.18	NS
B×C	4	104.73	26.18	0.32	NS
A×B×C	8	1368.11	171.01	2.12	*
Error	1014	81980.62	54.85		
Total	1040	421495.00			

** Significant at 0.01 level, * Significant at 0.05 level and NS Non Significant

The 'F' value for father Occupation is 1.77 which is not significant (Vide Table 4.2.1). It shows that the mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra do not differ significantly between service class, self business and labor class. So there is no significant influence of father Occupation on achievement in Mathematics at upper primary level of students residing in slums of Maharashtra.

From table 4.2.1 the F-value for monthly income is 7.16 which is significant at 0.01 level. It reflects that the mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra belonging to different Monthly Income group differ significantly. In order to know which group mean score of achievement in Mathematics of students differs significantly data were further analyzed with the help of 't' test and the results are given below-

Table 4.2.1.1

Monthly Income-wise Mean, Standard Deviation and 't' values of in Mathematics of students at upper Primary level residing in slums of Maharashtra

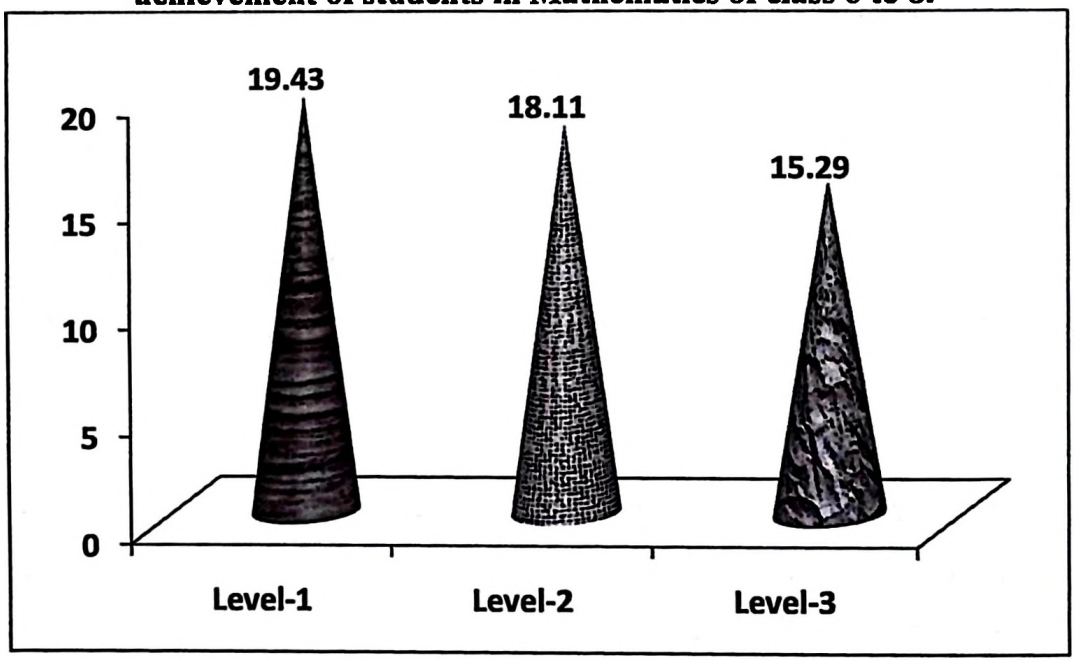
Level of monthly income	Mean	Standard Deviation	n		Between Level	't' Values	Degree of Freedom
level-1 = monthly income less than 20000	19.43	9.42	315		Level-1 and Level-2	2.00*	815
level-2 = monthly income ≥20000 and <30000	18.11	8.94	502		Level-1 and Level-3	5.16**	537
level-3 = monthly income ≥30000	15.29	8.83	224		Level-2 and Level-3	3.95**	724

** Significant at 0.01 level, * Significant at 0.05 level

From Table 4.2.1.1 it is evident that 't' value for families level-1 and level-2 is 2.00 which is significant at 0.05 level, but not at 0.01 level (df = 815). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra in level-1 and level-2 classes family students differ significant. Further the mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra belong in level-1 families is 19.43 which is significantly greater than those of level-2 families whose mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 18.11. Therefore we can say that student belong in level-1 families have better achievement in Mathematics than those of level-2 families. The 't' value for families of level-1 and level-3 is 5.16 which is significant at 0.01 level (df = 537). It reflects that the means scores of achievement in Mathematics achievement at upper primary level of students residing in Slums of Maharashtra belong in level-1 and level-2 families differ significant. Similarly 't' value for families level-2 and level-3 is 3.95 which is significant at 0.01 level (df = 724). It reflects that the means scores of achievement in Mathematics achievement at upper primary level of students residing in Slums

of Maharashtra belong in level-2 and level-3 families differ significant. The monthly income-wise means score of achievement in Mathematics are given in graphical form

Graph No. 4.2.1.2 shown below also reveals the monthly income-wise learning achievement of students in Mathematics of class 6 to 8.



level-1 = monthly income less than 20000, level-2 = monthly income ≥20000 and <30000 and level-3 = monthly income ≥30000

The 'F' value for family size is 0.24 which is not significant at 0.05 level (Vide Table 4.2.1). It shows that the mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra do not differ significantly between three family size categories (category-1= family member <5, category-2 = family member > 4 and less than < 7 and category-3 = family member > 6). So there is no significant influence of family size on achievement in Mathematics at upper primary level of students residing in slums of Maharashtra.

The 'F' value (Table 4.2.1) of interaction between father occupation and family monthly income of achievement in Mathematics at upper primary level of students

residing in Slums of Maharashtra is 1.48 which is not significant at 0.05 level (Vide Table 4.2.1). It reflects that there is no significant influence of interaction between father occupation and family monthly income on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.

The 'F' value (Table 4.2.1) of interaction between father occupation and family size of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 1.18 which is not significant at 0.05 level (Vide Table 4.2.1). It reflects that there is no significant influence of interaction between father occupation and family size on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.

The 'F' value (Table 4.2.1) of interaction between family monthly income and family size of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 0.32 which is not significant at 0.05 level (Vide Table 4.2.1). It reflects that there is no significant influence of interaction between family monthly income and family size on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra. It may there be said that interaction between family monthly income and family size on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra were found the same extend.

The 'F' value (Table 4.2.1) of interaction between father occupation, family monthly income and family size of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 2.12 which is significant (Vide Table 4.2.1) at 0.05 level. It reflects significant influence of interaction between father occupation, family monthly income and family size on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.

Objective 4.02.02: TO IDENTIFY THE PROBLEMS FACED BY THE CHILDREN IN LEARNING MATHEMATICS AT UPPER PRIMARY LEVEL OF SLUM AREA AND THEIR CAUSES.

Analysis of each question on the basis of frequency and percentage was done. Researcher classified of problems faced by the children in learning Mathematics at upper primary level of slum areas and their causes of 5 categories- (1. procedure problems, 2. understanding problems, 3. computational problems, 4. conceptual problems, 5. accidental / incidental problems). Also analyzed how many students are not attempted the question and how many solved fully correct. Each question was analyzed in given these categories.

1. How many learners have Procedure problems?
2. How many learners have Understanding problems?
3. How many learners have Computational problems?
4. How many learners have Conceptual problems?
5. How many learners have Accidental/Incidental problems?
6. How many learners did not attempt the question?
7. How many learners solved the whole question correctly?

Question-wise analysis and interpretation of Common Problems: Analysis of each question on the basis of frequency and percentage was done. Class-wise and level-wise each question was analyzed in mind the above aspects.

Class 6, Level-1

Question-1: (–8) – (–1) – 4 is equal to:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	4	2	9	1.90	4.00	3.10	2.81
2. Understanding problems	8	0	1	9	5.10	0.00	1.60	2.81
3. Computational problems	1	3	0	4	0.60	3.00	0.00	1.25
4. Conceptual problems	66	39	18	123	42.30	39.00	28.10	38.44
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	62	43	32	137	39.70	43.00	50.00	42.81
7. Correctly solved	16	11	11	38	10.30	11.00	17.20	11.88
Total	156	100	64	320	100.00	100.00	100.00	100.00

In the Hindi, English and Marathi mediums only 10.30%, 11.00% and 17.70% students respectively solved this question correctly and nearly half (Hindi =39.70%, English = 43.00% and Marathi = 50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-2: The place value of five in the number 685300 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	7	0	0	7	4.50	0.00	0.00	2.19
2. Understanding problems	8	1	0	9	5.10	1.00	0.00	2.81
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	11	14	0	25	7.10	14.00	0.00	7.81
5.Accidental/Incidental problems	2	1	2	5	1.30	1.00	3.10	1.56
6. Not solved	58	39	47	144	37.20	39.00	73.40	45.00
7. Correctly solved	70	45	15	130	44.90	45.00	23.40	40.63
Total	156	100	64	320	100.00	100.00	100.00	100.00

In the Hindi, English and Marathi mediums only 44.90%, 45.00% and 23.40% students respectively solved this question correctly and about one third in Hindi =37.20% and English = 39.00% and more than half in Marathi = 73.40% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-3: The value of 1640 – 1325 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	0	3	6	1.90	0.00	4.70	1.88
2. Understanding problems	0	0	0	0	0.00	0.00	0.00	0.00
3. Computational problems	12	14	1	27	7.70	14.00	1.60	8.44
4. Conceptual problems	17	11	0	28	10.90	11.00	0.00	8.75
5.Accidental/Incidental problems	2	2	5	9	1.30	2.00	7.80	2.81
6. Not solved	20	26	9	55	12.80	26.00	14.10	17.19
7. Correctly solved	102	47	46	195	65.40	47.00	71.90	60.94
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 65.40%, 47.00% and 71.90% students respectively solved this question correctly and about one fifth (Hindi =12.80%, English = 26.00% and Marathi = 14.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-4: The value of 372 + (620÷62) is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	2	6	16	5.10	2.00	9.40	5.00
2. Understanding problems	19	5	1	25	12.20	5.00	1.60	7.81
3. Computational problems	4	7	7	18	2.60	7.00	10.90	5.63
4. Conceptual problems	31	21	9	61	19.90	21.00	14.10	19.06
5. Accidental/Incidental problems	1	0	1	2	0.60	0.00	1.60	0.63
6. Not solved	43	49	20	112	27.60	49.00	31.30	35.00
7. Correctly solved	50	16	20	86	32.10	16.00	31.30	26.88
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 32.10%, 16.00% and 31.30% students respectively solved this question correctly and about one third in Hindi =27.60%, Marathi = 31.30% and nearly half in English = 49.00% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-5: The value of $12 \times 4 \times 25$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	9	6	4	19	5.80	6.00	6.30	5.94
2. Understanding problems	9	3	2	14	5.80	3.00	3.10	4.38
3. Computational problems	10	3	5	18	6.40	3.00	7.80	5.63
4. Conceptual problems	20	21	4	45	12.80	21.00	6.30	14.06
5.Accidental/Incidental problems	0	0	9	9	0.00	0.00	14.10	2.81
6. Not solved	56	39	18	113	35.90	39.00	28.10	35.31
7. Correctly solved	52	28	22	102	33.30	28.00	34.40	31.88
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 33.30%, 28.00% and 34.40% students respectively solved this question correctly and about one third (Hindi =35.90%, English = 39.00% and Marathi = 28.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-6: The total of – 29 and – 70 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	1	2	0.60	0.00	1.60	0.63
2. Understanding problems	7	0	0	7	4.50	0.00	0.00	2.19
3. Computational problems	4	3	0	7	2.60	3.00	0.00	2.19
4. Conceptual problems	47	49	26	122	30.10	49.00	40.60	38.13
5.Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	56	40	20	116	35.90	40.00	31.30	36.25
7. Correctly solved	41	8	17	66	26.30	8.00	26.60	20.63
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 26.30%, 8.00% and 26.60% students respectively solved this question correctly and about one third (Hindi =35.90%, English = 40.00% and Marathi = 31.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-7: The total of – 86 and 36 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	6	1	2	9	3.80	1.00	3.10	2.81
2. Understanding problems	3	0	1	4	1.90	0.00	1.60	1.25
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	65	48	26	139	41.70	48.00	40.60	43.44
5.Accidental/Incidental problems	2	0	0	2	1.30	0.00	0.00	0.63
6. Not solved	35	25	18	78	22.40	25.00	28.10	24.38
7. Correctly solved	45	26	17	88	28.80	26.00	26.60	27.50
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 28.80%, 26.00% and 26.60% students respectively solved this question correctly and about one fifth (Hindi =22.40 %, English = 25.00% and Marathi = 28.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-8: Which number has to be deducted from 20 to get 6?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	0	0	3	1.90	0.00	0.00	0.94
2. Understanding problems	11	2	3	16	7.10	2.00	4.70	5.00
3. Computational problems	3	0	0	3	1.90	0.00	0.00	0.94
4. Conceptual problems	27	27	7	61	17.30	27.00	10.90	19.06
5.Accidental/Incidental problems	0	0	1	1	0.00	0.00	1.60	0.31
6. Not solved	51	51	45	147	32.70	51.00	70.30	45.94
7. Correctly solved	61	20	8	89	39.10	20.00	12.50	27.81
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 39.10 %, 20.00% and 12.50% students respectively solved this question correctly and about one fifth in Hindi =32.70%, nearly half in English = 51.00% and very low in Marathi = 12.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-9: The value of 315 ÷ 3 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	2	3	6	0.60	2.00	4.70	1.88
2. Understanding problems	1	0	1	2	0.60	0.00	1.60	0.63
3. Computational problems	5	10	4	19	3.20	10.00	6.30	5.94
4. Conceptual problems	28	30	1	59	17.90	30.00	1.60	18.44
5. Accidental/Incidental problems	2	0	0	2	1.30	0.00	0.00	0.63
6. Not solved	22	20	22	64	14.10	20.00	34.40	20.00
7. Correctly solved	97	38	33	168	62.20	38.00	51.60	52.50
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 62.20%, 38.00% and 51.60% students respectively solved this question correctly and about one-tenth in Hindi =14.10%, about one fifth in English = 20.00% and Marathi = 34.40% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-10: The remainder of 4316 ÷17 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	3	7	11	0.60	3.00	10.90	3.44
2. Understanding problems	5	2	1	8	3.20	2.00	1.60	2.50
3. Computational problems	3	12	2	17	1.90	12.00	3.10	5.31
4. Conceptual problems	28	25	6	59	17.90	25.00	9.40	18.44
5. Accidental/Incidental problems	2	2	2	6	1.30	2.00	3.10	1.88
6. Not solved	47	40	34	121	30.10	40.00	53.10	37.81
7. Correctly solved	70	16	12	98	44.90	16.00	18.80	30.63
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 44.90%, 16.00% and 18.80% students respectively solved this question correctly and about one fifth Hindi =30.10%, less than half in English = 40.00% and half in Marathi = 53.10% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-11: Out of the >, <, = signs, which is appropriate for the following box?

$$-4 \quad \square \quad 0$$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	0	0	0.00	0.00	0.00	0.00
2. Understanding problems	0	1	0	1	0.00	1.00	0.00	0.31
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	49	43	11	103	31.40	43.00	17.20	32.19
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	13	2	19	34	8.30	2.00	29.70	10.63
7. Correctly solved	94	54	34	182	60.30	54.00	53.10	56.88
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 60.30%, 54.00% and 53.10% students respectively solved this question correctly and about very less in Hindi =8.30%, English = 2.00% and one third in Marathi = 29.70% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-12: Out of the >, <, = signs, which is appropriate for the following box?

$$3 \square -4$$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	0	0	0.00	0.00	0.00	0.00
2. Understanding problems	0	1	0	1	0.00	1.00	0.00	0.31
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	36	25	7	68	23.10	25.00	10.90	21.25
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	17	1	14	32	10.90	1.00	21.90	10.00
7. Correctly solved	103	73	43	219	66.00	73.00	67.20	68.44
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 66.00%, 73.00% and 67.20% students respectively solved this question correctly and about one fifth in Hindi =10.90%, very less in English = 1.00% and similar in Marathi = 21.90% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-13: The value of $2\frac{5}{9}$ in the form of improper fraction is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	1	0	3	1.30	1.00	0.00	0.94
2. Understanding problems	7	2	0	9	4.50	2.00	0.00	2.81
3. Computational problems	0	2	0	2	0.00	2.00	0.00	0.63
4. Conceptual problems	46	23	8	77	29.50	23.00	12.50	24.06
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	53	47	41	141	34.00	47.00	64.10	44.06
7. Correctly solved	48	25	15	88	30.80	25.00	23.40	27.50
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 30.80%, 25.00% and 23.40% students respectively solved this question correctly and about one fifth in Hindi =34.00%, nearly to half in English = 47.00% and Marathi = 64.10% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-14: The value of $\frac{5}{9} \times \frac{3}{2}$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	5	3	2	10	3.20	3.00	3.10	3.13
2. Understanding problems	8	4	0	12	5.10	4.00	0.00	3.75
3. Computational problems	9	4	2	15	5.80	4.00	3.10	4.69
4. Conceptual problems	58	32	2	92	37.20	32.00	3.10	28.75
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	49	51	33	133	31.40	51.00	51.60	41.56
7. Correctly solved	26	6	25	57	16.70	6.00	39.10	17.81
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 16.70%, 6.00% and 39.10% students respectively solved this question correctly and about one fifth in Hindi =31.40%, nearly half in English = 51.00% and Marathi = 51.60% students not

attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-15: The value of $40 + 27 - 7 + 2 - 451$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	2	1	11	5.10	2.00	1.60	3.44
2. Understanding problems	13	4	0	17	8.30	4.00	0.00	5.31
3. Computational problems	8	8	2	18	5.10	8.00	3.10	5.63
4. Conceptual problems	33	25	12	70	21.20	25.00	18.80	21.88
5. Accidental/Incidental problems	3	0	2	5	1.90	0.00	3.10	1.56
6. Not solved	69	50	35	154	44.20	50.00	54.70	48.13
7. Correctly solved	22	11	12	45	14.10	11.00	18.80	14.06
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 14.10%, 11.00% and 18.80% students respectively solved this question correctly and about half (Hindi = 44.20%, English = 50.00% and Marathi = 54.70%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-16: The number divisible by 4 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	4	2	0	6	2.60	2.00	0.00	1.88
2. Understanding problems	6	0	11	17	3.80	0.00	17.20	5.31
3. Computational problems	1	3	1	5	0.60	3.00	1.60	1.56
4. Conceptual problems	14	22	8	44	9.00	22.00	12.50	13.75
5. Accidental/Incidental problems	0	0	1	1	0.00	0.00	1.60	0.31
6. Not solved	109	70	40	219	69.90	70.00	62.50	68.44
7. Correctly solved	22	3	3	28	14.10	3.00	4.70	8.75
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 14.10%, 3.00% and 4.70% students respectively solved this question correctly and more than half (Hindi

=69.90%, English = 70.00% and Marathi = 62.50 %) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-17: If price of 5 pens is Rs. 20 then the price of 8 pens is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	13	3	0	16	8.30	3.00	0.00	5.00
2. Understanding problems	10	6	4	20	6.40	6.00	6.30	6.25
3. Computational problems	0	1	0	1	0.00	1.00	0.00	0.31
4. Conceptual problems	22	31	4	57	14.10	31.00	6.30	17.81
5. Accidental/Incidental problems	2	1	0	3	1.30	1.00	0.00	0.94
6. Not solved	73	46	36	155	46.80	46.00	56.30	48.44
7. Correctly solved	36	12	20	68	23.10	12.00	31.30	21.25
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 23.10%, 12.00% and 31.30% students respectively solved this question correctly and about nearly half in Hindi = 46.80%, English = 46.00% and Marathi = 56.30% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-18: 0.275 can be written in the form of fraction, as:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	0	1	0.60	0.00	0.00	0.31
2. Understanding problems	6	2	0	8	3.80	2.00	0.00	2.50
3. Computational problems	0	2	0	2	0.00	2.00	0.00	0.63
4. Conceptual problems	29	21	8	58	18.60	21.00	12.50	18.13
5. Accidental/Incidental problems	0	2	0	2	0.00	2.00	0.00	0.63
6. Not solved	86	62	52	200	55.10	62.00	81.30	62.50
7. Correctly solved	34	11	4	49	21.80	11.00	6.30	15.31
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 21.80%, 11.00% and 6.30% students respectively solved this question correctly and about more than half in Hindi = 55.10%, English = 62.00% and Marathi = 81.30% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-19: The ratio between Rs. 40 and Rs. 120 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	10	0	1	11	6.40	0.00	1.60	3.44
2. Understanding problems	10	2	3	15	6.40	2.00	4.70	4.69
3. Computational problems	4	0	1	5	2.60	0.00	1.60	1.56
4. Conceptual problems	16	16	3	35	10.30	16.00	4.70	10.94
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	78	57	40	175	50.00	57.00	62.50	54.69
7. Correctly solved	37	25	16	78	23.70	25.00	25.00	24.38
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 23.70%, 25.00% and 25.00% students respectively solved this question correctly and about half in Hindi =50.00%, English = 57.00% and more than half in Marathi = 62.50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-20: Shabana got 736 marks out of 800 in the examination, and then what will be the percentage she obtains in the examination?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	5	1	8	1.30	5.00	1.60	2.50
2. Understanding problems	27	5	0	32	7.30	5.00	0.00	10.00
3. Computational problems	0	1	1	2	0.00	1.00	1.60	0.63
4. Conceptual problems	18	30	11	59	11.50	30.00	17.20	18.44
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	87	49	34	170	55.80	49.00	53.10	53.13
7. Correctly solved	22	10	17	49	14.10	10.00	26.60	15.31
Total	156	100	64	320	90.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 14.10%, 10.00% and 26.60% students respectively solved this question correctly and nearly half in Hindi = 55.80%, English = 49.00% and Marathi = 53.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Class 6, Level-2

Question-1: The value of $905.5 + 27.197$ is :

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	0	4	7	1.90	0.00	6.30	2.19
2. Understanding problems	4	1	0	5	2.60	1.00	0.00	1.56
3. Computational problems	4	3	2	9	2.60	3.00	3.10	2.81
4. Conceptual problems	24	25	16	65	15.40	25.00	25.00	20.31
5. Accidental/Incidental problems	2	0	0	2	1.30	0.00	0.00	0.63
6. Not solved	16	21	24	61	10.30	21.00	37.50	19.06
7. Correctly solved	103	50	18	171	66.00	50.00	28.10	53.44
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 66.00%, 50.00% and 28.10% students respectively solved this question correctly and about less than one fifth in Hindi = 10.30%, English = 21.00% and one third in Marathi = 37.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question 2: H.C.F. of 45 and 30 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	7	3	18	5.10	7.00	4.70	5.63
2. Understanding problems	22	13	1	36	14.10	13.00	1.60	11.25
3. Computational problems	2	2	1	5	1.30	2.00	1.60	1.56
4. Conceptual problems	35	34	15	84	22.40	34.00	23.40	26.25
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	41	24	38	103	26.30	24.00	59.40	32.19
7. Correctly solved	47	20	6	73	30.10	20.00	9.40	22.81
Total	156	100	64	320	99.9	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 30.10%, 20.00% and 9.40% students respectively solved this question correctly and about one fifth in Hindi = 26.30%, English = 24.00% and more than half in Marathi = 59.40 % students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-3: The simplified form of $20 + \{10 - 5 + (7 - 3)\}$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	9	1	1	11	5.80	1.00	1.60	3.44
2. Understanding problems	9	2	0	11	5.80	2.00	0.00	3.44
3. Computational problems	4	3	0	7	2.60	3.00	0.00	2.19
4. Conceptual problems	34	23	9	66	21.80	23.00	14.10	20.63
5. Accidental/Incidental problems	1	1	0	2	0.60	1.00	0.00	0.63
6. Not solved	49	46	41	136	31.40	46.00	64.10	42.50
7. Correctly solved	50	24	13	87	32.10	24.00	20.30	27.19
Total	156	100	64	320	100.1	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 32.10%, 24.00% and 20.30% students respectively solved this question correctly and about one fifth in Hindi =31.40%, nearly half in English = 46.00% and more than half in Marathi = 64.10% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-4: The number of students in classes I to V in a school are 32, 35, 31, 32 and 30 respectively. The average strength of a class in the school is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	2	1	5	1.30	2.00	1.60	1.56
2. Understanding problems	20	2	1	23	12.80	2.00	1.60	7.19
3. Computational problems	2	1	0	3	1.30	1.00	0.00	0.94
4. Conceptual problems	10	21	6	37	6.40	21.00	9.40	11.56
5. Accidental/Incidental problems	0	0	3	3	0.00	0.00	4.70	0.94
6. Not solved	86	65	40	191	55.10	65.00	62.50	59.69
7. Correctly solved	36	9	13	58	23.10	9.00	20.30	18.13
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 23.10%, 9.00% and 20.30% students respectively solved this question correctly and about one third in Hindi = 55.10%, more than half in English = 65.00% and Marathi = 62.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-5: Rani paid Rs.75 for 15 chocolates. How much will Neetu pay for 8 similar chocolates?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	3	1	6	1.30	3.00	1.60	1.88
2. Understanding problems	19	9	3	31	12.20	9.00	6.30	9.69
3. Computational problems	2	2	0	4	1.30	2.00	0.00	1.25
4. Conceptual problems	15	31	12	58	9.60	31.00	18.80	18.13
5. Accidental/Incidental problems	0	0	1	1	0.00	0.00	1.60	0.31
6. Not solved	76	42	40	158	48.70	42.00	62.50	49.38
7. Correctly solved	42	13	7	62	26.90	13.00	10.90	19.38
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 26.90%, 13.00% and 10.90% students respectively solved this question correctly and around half of the students in Hindi =48.70%, English = 42.00% and more than half in Marathi = 62.50% not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-6: How much money Mohan will get by selling 24.63 kg of old newspapers at the rate of Rs. 3 per kg?

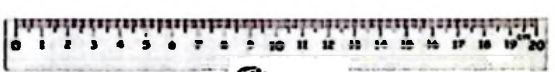
Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	1	1	3	0.60	1.00	1.60	0.94
2. Understanding problems	16	1	0	17	10.30	1.00	0.00	5.31
3. Computational problems	2	0	2	4	1.30	0.00	3.10	1.25
4. Conceptual problems	4	21	2	27	2.60	21.00	3.10	8.44
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	53	48	32	133	34.00	48.00	50.00	41.56
7. Correctly solved	80	29	27	136	51.30	29.00	42.20	42.50
Total	156	100	64	320	100.1	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 51.30%, 29.00% and 42.20% students respectively solved this question correctly and about one third students in Hindi = 34.00%, nearly half in English = 48.00% and Marathi = 50.00% did not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-7: Which of the following is an appropriate example of a line segment?

1. Edge of a ruler



2. Light coming from a torch

3. A string of loosely held thread

4. Edge of a coin

Medium- wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	0	1	0.60	0.00	0.00	0.31
2. Understanding problems	0	0	0	0	0.00	0.00	0.00	0.00
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	25	44	3	72	16.00	44.00	4.70	22.50
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	51	26	24	101	32.70	26.00	37.50	31.56
7. Correctly solved	79	30	37	146	50.60	30.00	57.80	45.63
Total	156	100	64	320	99.9	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 50.60%, 30.00% and 57.80% students respectively solved this question correctly and about more than one fifth in Hindi = 32.70%, and around one-third in English = 26.00% and Marathi = 37.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-8: There are 7500 sheets of papers for making notebooks. Each sheet can be cut to make 9 leaves of a note book. The total number of leaves made from the available sheets is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	4	1	0	5	2.60	1.00	0.00	1.56
2. Understanding problems	25	14	1	40	16.00	14.00	1.60	12.50
3. Computational problems	0	2	1	3	0.00	2.00	1.60	0.94
4. Conceptual problems	13	17	0	30	8.30	17.00	0.00	9.38
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	44	33	35	112	28.20	33.00	54.70	35.00
7. Correctly solved	69	33	27	129	44.20	33.00	42.20	40.31
Total	156	100	64	320	99.9	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 44.20%, 33.00% and 54.70% students respectively solved this question correctly and students about one fifth in Hindi = 28.20%, one-third in English = 33.00% and about half in Marathi = 54.70% did not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-9: A water tank contains 1500 liters of water. A bucket can hold 12 liters of water. How many such buckets of water can be filled from the water tank?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	1	2	6	1.90	1.00	3.10	1.88
2. Understanding problems	11	8	2	21	7.10	8.00	3.10	6.56
3. Computational problems	2	1	1	4	1.30	1.00	1.60	1.25
4. Conceptual problems	21	21	4	46	13.50	21.00	6.30	14.38
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	61	37	42	140	39.10	37.00	65.60	43.75
7. Correctly solved	57	32	13	102	36.50	32.00	20.30	31.88
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 36.50%, 32.00% and 20.30% students respectively solved this question correctly and about one third in Hindi =39.10% and English = 37.00%, more than half in Marathi = 65.60% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-10: Which of the following is a prime number?

9, 15, 19, 25

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	0	0	0.00	0.00	0.00	0.00
2. Understanding problems	3	1	0	4	1.90	1.00	0.00	1.25
3. Computational problems	2	0	0	2	1.30	0.00	0.00	0.63
4. Conceptual problems	5	17	0	22	3.20	17.00	0.00	6.88
5. Accidental/Incidental problems	0	1	0	1	0.00	1.00	0.00	0.31
6. Not solved	112	74	63	249	71.80	74.00	98.40	77.81
7. Correctly solved	34	7	1	42	21.80	7.00	1.60	13.13
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 21.80%, 7.00% and 1.60% students respectively solved this question correctly and more than half (Hindi =71.80%, English = 74.00% and Marathi = 98.40%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

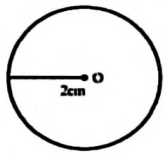
Question-11: The area of a rectangular floor with sides 12 m and 8 m is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	2	1	4	0.60	2.00	1.60	1.25
2. Understanding problems	28	22	1	51	17.90	22.00	1.60	15.94
3. Computational problems	6	0	0	6	3.80	0.00	0.00	1.88
4. Conceptual problems	20	22	5	47	12.80	22.00	7.80	14.69
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	44	40	35	119	28.20	40.00	54.70	37.19
7. Correctly solved	57	14	22	93	36.50	14.00	34.40	29.06
Total	156	100	64	320	99.8	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 36.50%, 14.00% and 34.40% students respectively solved this question correctly and about one third in Hindi =28.20%, and nearly half in English = 40.00% and Marathi = 54.70% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-12: The diameter of the given circle is:



Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	0	1	0.60	0.00	0.00	0.31
2. Understanding problems	2	1	0	3	1.30	1.00	0.00	0.94
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	2	11	0	13	1.30	11.00	0.00	4.06
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	115	75	63	253	73.70	75.00	98.40	79.06
7. Correctly solved	35	13	1	49	22.40	13.00	1.60	15.31
Total	156	100	64	320	99.9	100.0	100.0	100.0

the Hindi, English and Marathi mediums only 22.40%, 13.00% and 1.60% students respectively solved this question correctly and more than half (Hindi =73.70%, English = 75.00% and Marathi = 98.40%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-13: Nikhil purchased 12 guavas 16 Chikus. What is the ratio between the number of Chikus and Guavas?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	7	10	3	20	4.50	10.00	4.70	6.25
2. Understanding problems	20	3	3	26	12.80	3.00	4.70	8.13
3. Computational problems	3	3	0	6	1.90	3.00	0.00	1.88
4. Conceptual problems	26	15	4	45	16.70	15.00	6.30	14.06
5. Accidental/Incidental problems	3	0	0	3	1.90	0.00	0.00	0.94
6. Not solved	48	62	44	154	30.80	62.00	68.80	48.13
7. Correctly solved	49	7	10	66	31.40	7.00	15.60	20.63
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 31.40%, 7.00% and 15.60% students respectively solved this question correctly and about one third in Hindi =30.80%, and more than half in English = 62.00% and Marathi = 68.80% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-14: In a school the number of boys and girls is 384 and 480, respectively. What is ratio between boys and girls in simplified form?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	10	1	7	18	6.40	1.00	10.90	5.13
2. Understanding problems	20	5	2	27	12.80	5.00	3.10	7.69
3. Computational problems	2	1	0	3	1.30	1.00	0..0	0.85
4. Conceptual problems	21	18	7.8	46.8	13.50	18.00	7.80	13.34
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.28
6. Not solved	71	67	78.1	216.1	45.50	67.00	78.10	61.58
7. Correctly solved	31	8	0	39	19.90	8.00	0.00	11.11
Total	156	100	94.9	350.9	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 19.90%, 8.00% and 0.00% students respectively solved this question correctly and about one fifth (Hindi =45.50%, English = 67.00% and Marathi = 78.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-15: The price of 25 meter cloth is Rs. 3875, and then what will be price of 17 meter cloth?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	4	2	3	9	2.60	2.00	4.70	2.81
2. Understanding problems	12	3	3	18	7.70	3.00	4.70	5.63
3. Computational problems	2	2	3	7	1.30	2.00	4.70	2.19
4. Conceptual problems	27	25	7	59	17.30	25.00	10.90	18.44
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	87	67	47	201	55.80	67.00	73.40	62.81
7. Correctly solved	23	1	1	25	14.70	1.00	1.60	7.81
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 14.70%, 1.00% and 1.60% students respectively solved this question correctly and more than half (Hindi =55.80%, English = 67.00% and Marathi = 73.40%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-16: Que. 16: If X + 3 = 9, then the value of X is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	1	2	6	1.90	1.00	3.10	1.88
2. Understanding problems	4	1	1	6	2.60	1.00	1.60	1.88
3. Computational problems	2	0	0	2	1.30	0.00	0.00	0.63
4. Conceptual problems	30	27	6	63	19.20	27.00	9.40	19.69
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	84	56	44	184	53.80	56.00	68.80	57.50
7. Correctly solved	32	15	11	58	20.50	15.00	17.20	18.13
Total	156	100	64	320	99.9	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 20.50%, 15.00% and 17.20% students respectively solved this question correctly and about half (Hindi =53.80%, English = 56.00% and Marathi = 68.80%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-17: The solution of the equation $5x - 2 = 3x + 6$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	5	2	2	9	3.20	2.00	3.10	2.81
2. Understanding problems	9	5	1	15	5.80	5.00	1.60	4.69
3. Computational problems	0	2	0	2	0.00	2.00	0.00	0.63
4. Conceptual problems	34	17	3	54	21.80	17.00	4.70	16.88
5. Accidental/Incidental problems	1	1	0	2	0.60	1.00	0.00	0.63
6. Not solved	104	69	44	217	66.70	69.00	68.80	67.81
7. Correctly solved	3	4	14	21	1.90	4.00	21.90	6.56
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 1.90%, 4.00% and 21.09% students respectively solved this question correctly and about more than half (Hindi = 66.70%, English = 69.00 % and Marathi = 68.80%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-18: The sum of two numbers is 50, if out of them one is 20 then what is the other number?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	6	0	0	6	3.80	0.00	0.00	1.88
2. Understanding problems	14	0	0	14	9.00	0.00	0.00	4.38
3. Computational problems	0	1	0	1	0.00	1.00	0.00	0.31
4. Conceptual problems	26	26	3	55	16.70	26.00	4.70	17.19
5. Accidental/Incidental problems	1	0	0	1	0.60	0.00	0.00	0.31
6. Not solved	71	60	49	180	45.50	60.00	76.60	56.25
7. Correctly solved	38	13	12	63	24.40	13.00	18.80	19.69
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 24.40%, 13.00% and 18.80% students respectively solved this question correctly and about half of (Hindi = 45.50%, English = 60.00% and Marathi = 76.60%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-19: Suyash purchased $2\frac{1}{2}$ Kg. and Aashish $3\frac{1}{2}$ Kg. of sugar. What is the total quantity of sugar purchased by both of them?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	18	2	1	21	11.50	2.00	1.60	6.56
2. Understanding problems	3	1	7	11	1.90	1.00	10.90	3.44
3. Computational problems	3	4	1	8	1.90	4.00	1.60	2.50
4. Conceptual problems	21	19	7	47	13.50	19.00	10.90	14.69
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	90	67	47	204	57.70	67.00	73.40	63.75
7. Correctly solved	21	7	1	29	13.50	7.00	1.60	9.06
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 13.50%, 7.00% and 73.40% students respectively solved this question correctly and about more than half (Hindi = 57.70%, English = 67.00% and Marathi = 73.40%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-20: What is the angle called? Which is more than 90^0 and less than180^0?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	1	0	1	0.00	1.00	0.00	0.31
2. Understanding problems	0	2	0	2	0.00	2.00	0.00	0.63
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	18	34	6	58	11.50	34.00	9.40	18.13
5. Accidental/Incidental problems	0	0	2	2	0.00	0.00	3.10	0.63
6. Not solved	72	52	38	162	46.20	52.00	59.40	50.63
7. Correctly solved	66	11	18	95	42.30	11.00	28.10	29.69
Total	156	100	64	320	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 42.30%, 11.00% and 28.10% students respectively solved this question correctly and nearly half (Hindi = 46.20%, English = 52.00% and Marathi = 59.40%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Class 7, Level-1

Question-1: The value of (–6) ÷ 3 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	1	1	3	0.50	0.90	1.30	0.80
2. Understanding problems	9	3	1	13	4.80	2.80	1.30	3.49
3. Computational problems	2	1	0	3	1.10	0.90	0.00	0.80
4. Conceptual problems	46	18	14	78	24.60	17.00	17.50	20.91
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	41	12	33	86	21.90	11.30	41.30	23.06
7. Correctly solved	87	71	31	189	46.50	67.00	38.80	50.67
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 46.50%, 67.00% and 38.80% students respectively solved this question correctly and about one fifth in Hindi = 21.90%, English = 11.30% and slightly less than half in Marathi = 41.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-2: The fraction form of 0.4 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	2	2	0.00	0.00	2.50	0.54
2. Understanding problems	3	6	2	11	1.60	5.70	2.50	2.95
3. Computational problems	0	0	1	1	0.00	0.00	1.30	0.27
4. Conceptual problems	27	5	2	34	14.40	4.70	2.50	9.12
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	83	46	41	170	44.40	43.40	51.30	45.58
7. Correctly solved	73	49	32	154	39.00	46.20	40.00	41.29
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 39.00%, 46.20% and 40.00% students respectively solved this question correctly and about one fifth (Hindi = 44.40%, English = 43.40% and Marathi = 51.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-3: The value of 2^{-2} is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	2	3	0.50	0.00	2.50	0.80
2. Understanding problems	8	5	1	14	4.30	4.70	1.30	3.75
3. Computational problems	0	0	1	1	0.00	0.00	1.30	0.27
4. Conceptual problems	79	43	22	144	42.20	40.60	27.50	38.61
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	89	29	37	155	47.60	27.40	46.30	41.55
7. Correctly solved	10	29	17	56	5.30	27.40	21.30	15.01
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 5.30%, 27.40% and 21.30% students respectively solved this question correctly and about one fifth (Hindi = 47.60%, English = 27.40% and Marathi = 46.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-4: Tell the value of $(2^2)^2$:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	2	1	3	0.00	1.90	1.30	0.80
2. Understanding problems	7	3	0	10	3.70	2.80	0.00	2.68
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	87	45	11	143	46.50	42.50	13.80	38.34
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	73	24	37	134	39.00	22.60	46.30	35.92
7. Correctly solved	19	32	31	82	10.20	30.20	38.80	21.98
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 10.20%, 30.20% and 38.80% students respectively solved this question correctly and about one fifth (Hindi = 39.0%, English = 22.60% and Marathi = 46.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-5: Solve $\frac{15}{7} \div \left(\frac{-5}{7}\right)$:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	8	2	12	1.10	7.50	2.50	3.22
2. Understanding problems	12	6	1	19	6.40	5.70	1.30	5.09
3. Computational problems	0	0	1	1	0.00	0.00	1.30	0.27
4. Conceptual problems	66	40	41	147	35.30	37.70	51.30	39.41
5. Accidental/Incidental problems	3	0	0	3	1.60	0.00	0.00	0.80
6. Not solved	78	36	30	144	41.70	34.00	37.50	38.61
7. Correctly solved	26	16	5	47	13.90	15.10	6.30	12.60
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 13.90%, 15.10% and 6.30% students respectively solved this question correctly and about half in Hindi = 41.70%, and one third of English = 34.00% and Marathi = 37.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-6: The decimal form of $8\frac{5}{8}$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	14	3	8	25	7.50	2.80	10.00	6.70
2. Understanding problems	11	7	0	18	5.90	6.60	0.00	4.83
3. Computational problems	3	0	7	10	1.60	0.00	8.80	2.68
4. Conceptual problems	33	17	15	65	17.60	16.00	18.80	17.43
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	97	36	33	166	51.90	34.00	41.30	44.50
7. Correctly solved	28	43	17	88	15.00	40.60	21.30	23.59
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 15.00%, 40.60% and 21.30% students respectively solved this question correctly and nearly half in Hindi = 51.90%, and near to one-third in English = 34.00% and Marathi = 41.30% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-7: The decimal form of $5 \div \left(\frac{3}{8}\right) - \frac{1}{3}$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	2	20	30	4.30	1.90	25.00	8.04
2. Understanding problems	5	5	1	11	2.70	4.70	1.30	2.95
3. Computational problems	0	1	1	2	0.00	0.90	1.30	0.54
4. Conceptual problems	24	30	13	67	12.80	28.30	16.30	17.96
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	123	67	44	234	65.80	63.20	55.00	62.73
7. Correctly solved	27	1	1	29	14.40	0.90	1.30	7.77
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 14.40%, 0.90% and 1.30% students respectively solved this question correctly and about one fifth (Hindi = 65.80%, English = 63.20% and Marathi = 55.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-8: The multiplication result of $-4xy$ and $7y^2$ will be:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	6	7	14	0.50	5.70	8.80	3.75
2. Understanding problems	3	5	3	11	1.60	4.70	3.80	2.95
3. Computational problems	0	0	1	1	0.00	0.00	1.30	0.27
4. Conceptual problems	61	19	14	94	32.60	17.90	17.50	25.20
5. Accidental/Incidental problems	4	0	1	5	2.10	0.00	1.30	1.34
6. Not solved	78	45	33	156	41.70	42.50	41.30	41.82
7. Correctly solved	40	31	21	92	21.40	29.20	26.30	24.66
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 21.40%, 29.20% and 26.30% students respectively solved this question correctly and about less than half (Hindi =41.70%, English = 42.50% and Marathi = 41.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

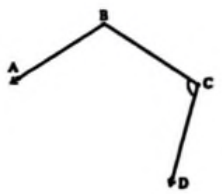
Question-9: The value of $(-3)^2 \times (-5)^2$ will be:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	2	2	4	0.00	1.90	2.50	1.07
2. Understanding problems	8	6	1	15	4.30	5.70	1.30	4.02
3. Computational problems	1	0	0	1	0.50	0.00	0.00	0.27
4. Conceptual problems	31	15	11	57	16.60	14.20	13.80	15.28
5. Accidental/Incidental problems	0	0	1	1	0.00	0.00	1.30	0.27
6. Not solved	104	29	52	185	55.60	27.40	65.00	49.60
7. Correctly solved	43	54	13	110	23.00	50.90	16.30	29.49
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 23.00%, 50.90% and 16.30% students respectively solved this question correctly and more than half students in Hindi = 55.60% and Marathi = 65.00%, and about one third in English = 27.40% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-10: The marked angle in the figure is:



Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	0	0	0.00	0.00	0.00	0.00
2. Understanding problems	4	2	0	6	2.10	1.90	0.00	1.61
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	34	1	13	48	18.20	0.90	16.30	12.87
5.Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	104	53	14	171	55.60	50.00	17.50	45.84
7. Correctly solved	45	50	53	148	24.10	47.20	66.30	39.68
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 24.10%, 47.20% and 66.30% students respectively solved this question correctly and about one fifth (Hindi = 55.60%, English = 50.00% and Marathi = 17.50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-11: $5^6 \times 5^{11}$ are equal to:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	1	2	5	1.10	0.90	2.50	1.34
2. Understanding problems	7	9	3	19	3.70	8.50	3.80	5.09
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	50	29	20	99	26.70	27.40	25.00	26.54
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	91	41	37	169	48.70	38.70	46.30	45.31
7. Correctly solved	37	26	18	81	19.80	24.50	22.50	21.72
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 19.80%, 24.50% and 22.50% students respectively solved this question correctly and about one fifth (Hindi = 48.70%, English = 38.70% and Marathi = 46.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-12: The value of $\frac{2}{3} \times \left(\frac{-4}{5}\right)$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	4	1	5	0.00	3.80	1.30	1.34
2. Understanding problems	7	5	2	14	3.70	4.70	2.50	3.75
3. Computational problems	1	0	0	1	0.50	0.00	0.00	0.27
4. Conceptual problems	17	14	14	45	9.10	13.20	17.50	12.06
5. Accidental/Incidental problems	2	0	0	2	1.10	0.00	0.00	0.54
6. Not solved	92	26	33	151	49.20	24.50	41.30	40.48
7. Correctly solved	68	57	30	155	36.40	53.80	37.50	41.55
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 36.40%, 53.80% and 37.50% students respectively solved this question correctly and about one fifth in English = 24.50% and half in Hindi = 49.20%, and Marathi = 41.30% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-13: The following pictograph shows the number of students in a class using different modes of travel to reach school:

Mode of travel	Number of students
Bus	☺☺☺☺☺
Van	☺☺☺☺☺☺☺
Cycle	☺☺☺
Walking	☺☺☺☺☺☺☺

How many students use van to go to school?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	0	0	0.00	0.00	0.00	0.00
2. Understanding problems	0	0	1	1	0.00	0.00	1.30	0.25
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	5	2	2.5	9.5	2.70	1.90	2.50	2.42
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	104	15	33.8	152.8	55.60	14.20	33.80	38.90
7. Correctly solved	78	89	62.5	229.5	41.70	84.00	62.50	58.43
Total	187	106	99.8	392.8	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 41.70%, 84.00% and 62.50% students respectively solved this question correctly and about one fifth (Hindi = 55.60%, English = 14.20% and Marathi = 33.80%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-14: 0.527 can be written as:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	0	0	0.00	0.00	0.00	0.00
2. Understanding problems	3	2	0	5	1.60	1.90	0.00	1.34
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	31	16	17	64	16.60	15.10	21.30	17.16
5. Accidental/Incidental problems	0	0	1	1	0.00	0.00	1.30	0.27
6. Not solved	107	25	41	173	57.20	23.60	51.30	46.38
7. Correctly solved	46	63	21	130	24.60	59.40	26.30	34.85
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 24.60%, 59.40% and 26.30% students respectively solved this question correctly and about one fifth (Hindi = 57.20%, English = 23.60% and Marathi = 51.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-15: The value of $(-3)^2 \times (-5)^2$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	7	1	1	9	3.70	0.90	1.30	2.41
2. Understanding problems	3	2	0	5	1.60	1.90	0.00	1.34
3. Computational problems	0	4	1	5	0.00	3.80	1.30	1.34
4. Conceptual problems	27	14	10	51	14.40	13.20	12.50	13.67
5. Accidental/Incidental problems	0	0	1	1	0.00	0.00	1.30	0.27
6. Not solved	116	51	57	224	62.00	48.10	71.30	60.05
7. Correctly solved	34	34	10	78	18.20	32.10	12.50	20.91
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 18.20%, 32.10% and 12.50% students respectively solved this question correctly and about one fifth (Hindi = 62.00%, English = 48.10% and Marathi = 71.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

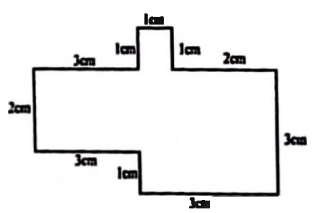
Question-16: Rahul's bedroom floor is in rectangular shape with length of 4 meters and width of 3.5 meters. What is the area of the floor?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	7	9	3	19	3.70	8.50	3.80	5.09
2. Understanding problems	2	5	1	8	1.10	4.70	1.30	2.14
3. Computational problems	0	1	3	4	0.00	0.90	3.80	1.07
4. Conceptual problems	15	9	5	29	8.00	8.50	6.30	7.77
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	112	29	55	196	59.90	27.40	68.80	52.55
7. Correctly solved	50	53	13	116	26.70	50.00	16.30	31.10
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 26.70%, 50.00% and 16.30% students respectively solved this question correctly and about one fifth in English = 27.40% and more than half in Hindi = 59.90%, and Marathi = 68.80% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-17: The perimeter of the given figure is:



Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	1	2	11	4.30	0.90	2.50	2.95
2. Understanding problems	1	0	0	1	0.50	0.00	0.00	0.27
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	18	6	3	27	9.60	5.70	3.80	7.24
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	96	55	54	205	51.30	51.90	67.50	54.96
7. Correctly solved	64	44	21	129	34.20	41.50	26.30	34.58
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 34.20%, 41.50% and 26.30% students respectively solved this question correctly and about more than half (Hindi = 51.30%, English = 51.90% and Marathi = 67.50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-18: Following bar graph shows the number of trees of different varieties in a garden. How many more guava trees are there than mango trees?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	1	2	0.50	0.00	1.30	0.54
2. Understanding problems	1	3	1	5	0.50	2.80	1.30	1.34
3. Computational problems	0	0	1	1	0.00	0.00	1.30	0.27
4. Conceptual problems	7	5	1	13	3.70	4.70	1.30	3.49
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	127	65	64	256	67.90	61.30	80.00	68.63
7. Correctly solved	51	33	12	96	27.30	31.10	15.00	25.74
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 27.30%, 31.10% and 15.00% students respectively solved this question correctly and about one fifth in Hindi = 27.30%, and more than half English = 61.30% and Marathi = 80.00% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-19: The price of 4 Dozen Bananas is Rs. 48. What will be the price of 6 Dozen Bananas?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	3	6	12	1.60	2.80	7.50	3.22
2. Understanding problems	8	3	8	19	4.30	2.80	10.00	5.09
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	33	22	10	65	17.60	20.80	12.50	17.43
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	90	29	43	162	48.10	27.40	53.80	43.43
7. Correctly solved	53	49	13	115	28.30	46.20	16.30	30.83
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 28.30%, 46.20% and 16.30% students respectively solved this question correctly and about one fifth in English = 27.40% and half in Hindi = 48.10%, and Marathi = 53.80% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-20: A shopkeeper purchased a steel Almirah for Rs. 2850 and sold it for Rs. 3420. What is the percentage rate of profit?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	6	6	4	16	3.20	5.70	5.00	4.29
2. Understanding problems	4	12	10	26	2.10	11.30	12.50	6.97
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	39	34	9	82	20.90	32.10	11.30	21.98
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	134	50	55	239	71.70	47.20	68.80	64.08
7. Correctly solved	4	4	2	10	2.10	3.80	2.50	2.68
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 2.10%, 3.80% and 2.50% students respectively solved this question correctly and about more than half (Hindi = 71.70%, English = 47.20% and Marathi = 68.80%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Class 7, Level-2

Question-1: Arrange $\frac{4}{9}, \frac{-5}{6}, \frac{-7}{-12}, \frac{11}{24}$ in ascending order:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	5	1	6	0.00	4.70	1.30	1.61
2. Understanding problems	3	2	3	8	1.60	1.90	3.80	2.14
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	130	64	23	217	69.50	60.40	28.80	58.18
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	40	24	20	84	21.40	22.60	25.00	22.52
7. Correctly solved	13	11	33	57	7.00	10.40	41.30	15.28
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 7.00%, 10.40% and 41.30% students respectively solved this question correctly and about one fifth (Hindi = 21.40%, English = 22.60% and Marathi = 25.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-2: Solution of $\frac{2}{3} \times \left[\frac{3}{4} + \left(-\frac{1}{4}\right)\right]$ will be:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	3	2	6	0.50	2.80	2.50	1.61
2. Understanding problems	1	6	1	8	0.50	5.70	1.30	2.14
3. Computational problems	1	2	0	3	0.50	1.90	0.00	0.80
4. Conceptual problems	42	27	19	88	22.50	25.50	23.80	23.59
5. Accidental/Incidental problems	2	1	0	3	1.10	0.90	0.00	0.80
6. Not solved	125	52	56	233	66.80	49.10	70.00	62.47
7. Correctly solved	15	15	2	32	8.00	14.20	2.50	8.58
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 8.00%, 14.20% and 2.50% students respectively solved this question correctly and more than half (Hindi = 66.80%, English = 49.10% and Marathi = 70.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-3: Solve $\left(\frac{7}{8}\right)^{2} \div \left(\frac{8}{7}\right)^{-2}$ **:**

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	4	3	3	10	2.10	2.80	3.80	2.68
2. Understanding problems	6	9	3	18	3.20	8.50	3.80	4.83
3. Computational problems	0	1	1	2	0.00	0.90	1.30	0.54
4. Conceptual problems	70	42	17	129	37.40	39.60	21.30	34.58
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	106	41	55	202	56.70	38.70	68.80	54.16
7. Correctly solved	0	10	1	11	0.00	9.40	1.30	2.95
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 0.00%, 9.40% and 1.30% students respectively solved this question correctly and about one third in English = 38.70% and about half in Hindi = 56.70%, and Marathi = 68.80% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-4: Multiples of 5 are 5, 10, 15, ___

Multiples of 6 are 6, 12, 18, ___

The LCM of 5 and 6 is

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	6	7	15	1.10	5.70	8.80	4.02
2. Understanding problems	3	4	0	7	1.60	3.80	0.00	1.88
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.27
4. Conceptual problems	36	31	5	72	19.30	29.20	6.30	19.30
5. Accidental/Incidental problems	0	1	0	1	0.00	0.90	0.00	0.27
6. Not solved	88	39	54	181	47.10	36.80	67.50	48.53
7. Correctly solved	58	24	14	96	31.00	22.60	17.50	25.74
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 31.00%, 22.60% and 17.50% students respectively solved this question correctly and about one fifth (Hindi = 47.10%, English = 36.80% and Marathi = 67.50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-5: Calculate interest on Rs. 500 at the rate of 6% per annum will be:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	4	4	11	1.60	3.80	5.00	2.95
2. Understanding problems	4	6	1	11	2.10	5.70	1.30	2.95
3. Computational problems	0	0	2	2	0.00	0.00	2.50	0.54
4. Conceptual problems	31	21	6	58	16.60	19.80	7.50	15.55
5. Accidental/Incidental problems	0	2	1	3	0.00	1.90	1.30	0.80
6. Not solved	68	60	38	166	36.40	56.60	47.50	44.50
7. Correctly solved	81	13	28	122	43.30	12.30	35.00	32.71
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 43.30%, 12.30% and 35.00% students respectively solved this question correctly and about one third in Hindi = 36.40%, and near to half in English =56.60% and Marathi = 47.50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-6: The H. C. F. of 21, 49 and 84 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	6	8	22	4.30	5.70	10.00	5.90
2. Understanding problems	3	2	1	6	1.60	1.90	1.30	1.61
3. Computational problems	2	1	0	3	1.10	0.90	0.00	0.80
4. Conceptual problems	46	33	9	88	24.60	31.10	11.30	23.59
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	63	37	36	136	33.70	34.90	45.00	36.46
7. Correctly solved	65	27	26	118	34.80	25.50	32.50	31.64
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 34.80%, 25.50% and 32.50% students respectively solved this question correctly and about one third (Hindi = 33.70%, English = 34.90% and Marathi = 45.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-7: The sum of thrice of a number and 6 is 18. It can be expressed algebraically as:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	3	1	6	1.10	2.80	1.30	1.61
2. Understanding problems	5	4	0	9	2.70	3.80	0.00	2.41
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.27
4. Conceptual problems	32	20	4	56	17.10	18.90	5.00	15.01
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	89	66	32	187	47.60	62.30	40.00	50.13
7. Correctly solved	59	12	43	114	31.60	11.30	53.80	30.56
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 31.60%, 11.30% and 53.80% students respectively solved this question correctly and about more than half (Hindi = 47.60%, English = 62.30% and Marathi = 40.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-8: $\frac{4}{7}$ th part of $\left(\frac{2}{5}\right)$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	2	0	2	0.00	1.90	0.00	0.54
2. Understanding problems	9	8	1	18	4.80	7.50	1.30	4.83
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.27
4. Conceptual problems	35	9	41	85	18.70	8.50	51.30	22.79
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	121	71	, 36	228	64.70	67.00	45.00	61.13
7. Correctly solved	22	15	2	39	11.80	14.20	2.50	10.46
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 11.80%, 14.20% and 2.50% students respectively solved this question correctly and about one fifth (Hindi = 64.70%, English = 67.00% and Marathi = 45.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-9: Rajani has 24 toffees; she gave one third of toffees to her younger brother. What is the number of toffees which she gave to her brother?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	5	2	8	0.50	4.70	2.50	2.14
2. Understanding problems	6	4	2	12	3.20	3.80	2.50	3.22
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	12	7	15	34	6.40	6.60	18.80	9.12
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	123	63	45	231	65.80	59.40	56.30	61.93
7. Correctly solved	45	27	16	88	24.10	25.50	20.00	23.59
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 24.10%, 25.50% and 20.00% students respectively solved this question correctly and about more than half (Hindi = 65.80%, English = 59.40% and Marathi = 56.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-10: The present age of Rohan is Y years and his daughter Rohini's present age is one third of his age. Rohini's age can be written in the following form:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	0	1	1	0.00	0.00	1.30	0.27
2. Understanding problems	5	4	1	10	2.70	3.80	1.30	2.68
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	8	5	11	24	4.30	4.70	13.80	6.43
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	129	80	53	262	69.00	75.50	66.30	70.24
7. Correctly solved	45	17	14	76	24.10	16.00	17.50	20.38
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 24.10%, 16.00% and 17.50% students respectively solved this question correctly and about more than half (Hindi = 69.00%, English = 75.50% and Marathi = 66.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-11: Population of a village is 800. If, out of them 520 are literate, then tell what will be the percentage of in the illiterate.

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	6	2	5	13	3.20	1.90	6.30	3.49
2. Understanding problems	8	6	16	30	4.30	5.70	20.00	8.04
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	48	11	10	69	25.70	10.40	12.50	18.50
5. Accidental/Incidental problems	0	1	0	1	0.00	0.90	0.00	0.27
6. Not solved	101	74	44	219	54.00	69.80	55.00	58.71
7. Correctly solved	24	12	5	41	12.80	11.30	6.30	10.99
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 12.80%, 11.30% and 6.30% students respectively solved this question correctly and about more than half (Hindi = 54.00%, English = 69.80% and Marathi = 55.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-12: At what rate of interest the principle of Rs. 800 will amount to Rs. 1000 in two years?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	4	2	2	8	2.10	1.90	2.50	2.14
2. Understanding problems	4	4	6	14	2.10	3.80	7.50	3.75
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	56	15	15	86	29.90	14.20	18.80	23.06
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	119	79	56	254	63.60	74.50	70.00	68.10
7. Correctly solved	4	6	1	11	2.10	5.70	1.30	2.95
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 2.10%, 5.70% and 1.30% students respectively solved this question correctly and about one fifth (Hindi = 63.60%, English = 74.50% and Marathi = 70.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-13: The multiplication of two numbers is 765 their H.C.F. is 3 then what is their L.C.M.?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	1	1	2	0.00	0.90	1.30	0.54
2. Understanding problems	10	7	2	19	5.30	6.60	2.50	5.09
3. Computational problems	2	0	4	6	1.10	0.00	5.00	1.61
4. Conceptual problems	29	3	11	43	15.50	2.80	13.80	11.53
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	143	85	55	283	76.50	80.20	68.80	75.87
7. Correctly solved	3	10	7	20	1.60	9.40	8.80	5.36
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 1.60%, 9.40% and 8.80% students respectively solved this question correctly and about one fifth (Hindi = 76.50%, English = 80.20% and Marathi = 68.80%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-14: In complementary angle, If $m\angle A = 70^0$ then what will be value of remaining angles of $\angle A$?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	1	0	1	0.00	0.90	0.00	0.27
2. Understanding problems	2	9	1	12	1.10	8.50	1.30	3.22
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	32	9	11	52	17.10	8.50	13.80	13.94
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	125	38	46	209	66.80	35.80	57.50	56.03
7. Correctly solved	28	49	22	99	15.00	46.20	27.50	26.54
Total	187	106	80	373	100.0	100.0	100.0	100.0

the Hindi, English and Marathi mediums only 15.00%, 46.20% and 27.50% students respectively solved this question correctly and about one fifth (Hindi = 66.80%, English = 35.80% and Marathi = 57.50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-15: Find three consecutive numbers coming between $\frac{2}{7}, \frac{6}{7}$ are:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	0	1	4	1.60	0.00	1.30	1.07
2. Understanding problems	3	6	0	9	1.60	5.70	0.00	2.41
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	15	4	13	32	8.00	3.80	16.30	8.58
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	95	57	36	188	50.80	53.80	45.00	50.40
7. Correctly solved	70	39	30	139	37.40	36.80	37.50	37.27
Total	187	106	80	373	100.0	100.0	100.0	100.0

the Hindi, English and Marathi mediums only 37.40%, 36.80% and 37.50% students respectively solved this question correctly and about half (Hindi = 50.80%, English = 53.80% and Marathi = 45.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-16: Convert the $\frac{7}{4}$ number in decimals:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	1	1	2	0.00	0.90	1.30	0.54
2. Understanding problems	4	2	0	6	2.10	1.90	0.00	1.61
3. Computational problems	2	0	0	2	1.10	0.00	0.00	0.54
4. Conceptual problems	8	2	8	18	4.30	1.90	10.00	4.83
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	122	59	56	237	65.20	55.70	70.00	63.54
7. Correctly solved	51	42	15	108	27.30	39.60	18.80	28.95
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 27.30%, 39.60% and 18.80% students respectively solved this question correctly and about more than half (Hindi = 65.20%, English = 55.70% and Marathi = 70.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-17: The simplified form of $\left[\left(\frac{15}{12}\right)^3\right]$ is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	1	5	6	0.00	0.90	6.30	1.61
2. Understanding problems	4	16	3	23	2.10	15.10	3.80	6.17
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.27
4. Conceptual problems	10	13	9	32	5.30	12.30	11.30	8.58
5. Accidental/Incidental problems	1	0	0	1	0.50	0.00	0.00	0.27
6. Not solved	126	74	37	237	67.40	69.80	46.30	63.54
7. Correctly solved	46	1	26	73	24.60	0.90	32.50	19.57
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 24.60%, 0.90% and 32.50% students respectively solved this question correctly and about one fifth (Hindi = 67.40%, English = 69.80% and Marathi = 32.50%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-18: Add $17a^2b^2 + 16c$ and $28c - 28a^2b^2$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	4	0	3	7	2.10	0.00	3.80	1.88
2. Understanding problems	8	3	0	11	4.30	2.80	0.00	2.95
3. Computational problems	0	1	1	2	0.00	0.90	1.30	0.54
4. Conceptual problems	101	34	25	160	54.00	32.10	31.30	42.90
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	54	68	36	158	28.90	64.20	45.00	42.36
7. Correctly solved	20	0	15	35	10.70	0.00	18.80	9.38
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 10.70%, 0.00% and 18.80% students respectively solved this question correctly and about one third in Hindi =28.90%, and more than half English = 64.20% and Marathi = 45.00% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-19: If the price of 7 Kg. Onion is Rs. 140; then what will be the price if 12 Kg onion?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	6	1	4	11	3.20	0.90	5.00	2.96
2. Understanding problems	4	3	0	7	2.10	2.80	0.00	1.88
3. Computational problems	0	0	1	1	0.00	0.00	1.30	0.27
4. Conceptual problems	38	18.9	12	68.9	20.30	18.90	15.00	18.53
5. Accidental/Incidental problems	0	1	0	1	0.00	0.90	0.00	0.27
6. Not solved	78	32	40	150	41.70	30.20	50.00	40.33
7. Correctly solved	61	49	23	133	32.60	46.20	28.80	35.76
Total	187	104.9	80	371.9	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 32.60%, 46.20% and 28.80% students respectively solved this question correctly and about one third and half (Hindi = 41.70%, English = 30.20% and Marathi = 50.00%) students not attempted at all Rest of the percentage of students solved the question but not correctly.

Question-20: Neha borrowed Rs. 50,000 from bank to purchase a two wheeler at 12% per year. How much she will pay after one year?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	7	0	8	15	3.70	0.00	10.00	4.02
2. Understanding problems	4	9	0	13	2.10	8.50	0.00	3.49
3. Computational problems	0	2	1	3	0.00	1.90	1.30	0.80
4. Conceptual problems	21	8	5	34	11.20	7.50	6.30	9.12
5. Accidental/Incidental problems	0	2	5	7	0.00	1.90	6.30	1.88
6. Not solved	127	47	44	218	67.90	44.30	55.00	58.45
7. Correctly solved	28	38	17	83	15.00	35.80	21.30	22.25
Total	187	106	80	373	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 15.00%, 35.80% and 21.30% students respectively solved this question correctly and about near to half (Hindi = 67.90%, English = 44.30% and Marathi = 55.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Class 8, Level-1

Question-1: What will be square root of $\frac{9}{16}$?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	1	2	5	1.40	0.90	1.90	1.40
2. Understanding problems	3	3	5	11	2.10	2.80	4.70	3.08
3. Computational problems	0	1	5	6	0.00	0.90	4.70	1.68
4. Conceptual problems	41	18	3	62	28.50	17.00	2.80	17.37
5.Accidental/Incidental problems	0	0	1	1	0.00	0.00	0.90	0.28
6. Not solved	72	12	55	139	50.00	11.30	51.40	38.94
7. Correctly solved	26	71	36	133	18.10	67.00	33.60	37.25
Total	144	106	107	357	100.0	100.0	100.00	100.00

In the Hindi, English and Marathi mediums only 18.10%, 67.00% and 33.60% students respectively solved this question correctly and about one half (Hindi =50.00% and Marathi = 51.40%) students not solved the question correctly.

Question-2: What will be cube root of 27?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	2	3	0.70	0.00	1.90	0.84
2. Understanding problems	2	6	5	13	1.40	5.70	4.70	3.64
3. Computational problems	0	0	5	5	0.00	0.00	4.70	1.40
4. Conceptual problems	38	5	3	46	26.40	4.70	2.80	12.89
5.Accidental/Incidental problems	3	0	1	4	2.10	0.00	0.90	1.12
6. Not solved	25	46	55	126	17.40	43.40	51.40	35.29
7. Correctly solved	75	49	36	160	52.10	46.20	33.60	44.82
Total	144	106	107	357	100.00	100.00	100.00	100.00

In the Hindi, English and Marathi mediums only 52.10%, 46.20% and 33.60% students respectively solved this question correctly and about half (English = 43.40% and Marathi = 51.40%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-3: Write indices form of $\sqrt[4]{37}$ .....

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	1	2	0.70	0.00	0.90	0.56
2. Understanding problems	2	5	6	13	1.40	4.70	5.60	3.64
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	16	43	2	61	11.10	40.60	1.90	17.09
5. Accidental/Incidental problems	0	0	6	6	0.00	0.00	5.60	1.68
6. Not solved	84	29	69	182	58.30	27.40	64.50	50.98
7. Correctly solved	41	29	23	93	28.50	27.40	21.50	26.05
Total	144	106	107	357	100.00	100.00	100.00	100.00

In the Hindi, English and Marathi mediums only 28.50%, 27.40% and 21.50% students respectively solved this question correctly and more than half in Hindi = 58.30% and Marathi = 64.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-4: Simplify $(x-4)(x-1)$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	22	2	6	30	15.30	1.90	5.60	8.40
2. Understanding problems	1	3	0	4	0.70	2.80	0.00	1.12
3. Computational problems	2	0	0	2	1.40	0.00	0.00	0.56
4. Conceptual problems	19	45	4	68	13.20	42.50	3.70	19.05
5.Accidental/Incidental problems	1	0	10	11	0.70	0.00	9.30	3.08
6. Not solved	43	24	80	147	29.90	22.60	74.80	41.18
7. Correctly solved	56	32	7	95	38.90	30.20	6.50	26.61
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 38.90%, 30.20% and 6.50% students respectively solved this question correctly and about one third in Hindi = 29.90% and English = 22.60% and more than half in Marathi = 74.80% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-5: Subtract $\frac{5x}{8} - \frac{3x}{8} =$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	8	1	17	5.60	7.50	0.90	4.76
2. Understanding problems	6	6	1	13	4.20	5.70	0.90	3.64
3. Computational problems	1	0	0	1	0.70	0.00	0.00	0.28
4. Conceptual problems	4	40	0	44	2.80	37.70	0.00	12.32
5.Accidental/Incidental problems	2	0	3	5	1.40	0.00	2.80	1.40
6. Not solved	68	36	94	198	47.20	34.00	87.90	55.46
7. Correctly solved	55	16	8	79	38.20	15.10	7.50	22.13
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 38.20%, 15.10% and 7.50% students respectively solved this question correctly and about half in Hindi = 47.20% and English = 34.00% and more than half Marathi = 87.90% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-6: Find the number set, which is of the form of greatest to smallest?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	3	0	3	0.00	2.80	0.00	0.84
2. Understanding problems	0	7	1	8	0.00	6.60	0.90	2.24
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	47	17	28	92	32.60	16.00	26.20	25.77
5.Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	63	36	63	162	43.80	34.00	58.90	45.38
7. Correctly solved	34	43	15	92	23.60	40.60	14.00	25.77
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 23.60%, 40.60% and 14.00% students respectively solved this question correctly and less than half in Hindi = 43.80% and English = 34.00% and more than half in Marathi = 58.90% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-7: $\frac{5}{7}+\left(\frac{5}{14}\times\frac{6}{21}\right)=$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	31	2	10	43	21.50	1.90	9.30	12.04
2. Understanding problems	1	5	0	6	0.70	4.70	0.00	1.68
3. Computational problems	1	1	2	4	0.70	0.90	1.90	1.12
4. Conceptual problems	40	30	0	70	27.80	28.30	0.00	19.61
5.Accidental/Incidental problems	1	0	0	1	0.70	0.00	0.00	0.28
6. Not solved	64	67	94	225	44.40	63.20	87.90	63.03
7. Correctly solved	6	1	1	8	4.20	0.90	0.90	2.24
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 4.20%, 0.90% and 0.90% students respectively solved this question correctly and about one Hindi =44.40%, English = 63.20% and Marathi = 87.90% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-8: 5^{200} **is equal to:**

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	1	5	7	0.70	1.00	4.70	2.01
2. Understanding problems	5	3	0	8	3.50	3.10	0.00	2.30
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	33	48	3	84	22.90	49.50	2.80	24.14
5.Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	97	40	94	231	67.40	41.20	87.90	66.38
7. Correctly solved	8	5	5	18	5.60	5.20	4.70	5.17
Total	144	97	107	348	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 5.60%, 5.20% and 4.70% students respectively solved this question correctly and more than half in Hindi = 67.40% and Marathi = 87.90% , and English = 41.20% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-9: Fifth value of 13 is:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	2	1	3	0.00	1.90	0.90	0.84
2. Understanding problems	2	6	3	11	1.40	5.70	2.80	3.08
3. Computational problems	0	0	1	1	0.00	0.00	0.90	0.28
4. Conceptual problems	12	15	1	28	8.30	14.20	0.90	7.84
5.Accidental/Incidental problems	2	0	0	2	1.40	0.00	0.00	0.56
6. Not solved	64	29	89	182	44.40	27.40	83.20	50.98
7. Correctly solved	64	54	12	130	44.40	50.90	11.20	36.41
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 44.40%, 50.90% and 11.20% students respectively solved this question correctly and about half in Hindi = 44.40%, and one third in English = 27.40% and more than half in Marathi = 83.20% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-10: Area of a square size is 7056 Sq. Cm; what will be the length of its one side?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	10	0	0	10	6.90	0.00	0.00	2.80
2. Understanding problems	5	2	2	9	3.50	1.90	1.90	2.52
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	15	1	0	16	10.40	0.90	0.00	4.48
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	78	53	105	236	54.20	50.00	98.10	66.11
7. Correctly solved	36	50	0	86	25.00	47.20	0.00	24.09
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 25.00%, 47.20% and 0.00% students respectively solved this question correctly and about one fifth (Hindi = 54.20%, English = 50.00% and Marathi = 98.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-11: Simplify$(a+2)(a-1)$?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	20	1	4	25	13.90	0.90	3.70	7.00
2. Understanding problems	4	9	5	18	2.80	8.50	4.70	5.04
3. Computational problems	0	0	1	1	0.00	0.00	0.90	0.28
4. Conceptual problems	22	29	2	53	15.30	27.40	1.90	14.85
5. Accidental/Incidental problems	1	0	5	6	0.70	0.00	4.70	1.68
6. Not solved	41	41	87	169	28.50	38.70	81.30	47.34
7. Correctly solved	56	26	3	85	38.90	24.50	2.80	23.81
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 38.90%, 24.50% and 2.80% students respectively solved this question correctly and about one third in Hindi = 28.50% and English = 38.70% and more than half in Marathi = 81.30% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question -12: Find the value of $(81)^{1/4}$:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	4	0	5	0.70	3.80	0.00	1.40
2. Understanding problems	3	5	0	8	2.10	4.70	0.00	2.24
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	23	14	0	37	16.00	13.20	0.00	10.36
5. Accidental/Incidental problems	1	0	1	2	0.70	0.00	0.90	0.56
6. Not solved	107	26	100	233	74.30	24.50	93.50	65.27
7. Correctly solved	9	57	6	72	6.30	53.80	5.60	20.17
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 6.30%, 53.80% and 5.60% students respectively solved this question correctly and more than half Hindi = 74.30% and Marathi = 93.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-13: Divide $(x^2 + 6x + 8) \div (x + 4)$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	11	0	5	16	7.60	0.00	4.70	4.48
2. Understanding problems	2	0	1	3	1.40	0.00	0.90	0.84
3. Computational problems	7	0	1	8	4.90	0.00	0.90	2.24
4. Conceptual problems	17	2	0	19	11.80	1.90	0.00	5.32
5. Accidental/Incidental problems	0	0	2	2	0.00	0.00	1.90	0.56
6. Not solved	53	15	84	152	36.80	14.20	78.50	42.58
7. Correctly solved	54	89	14	157	37.50	84.00	13.10	43.98
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 37.50%, 84.00% and 13.10% students respectively solved this question correctly and about one fifth in Hindi = 36.80%, English = 14.20% and more than Marathi = 78.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question -14: In a square, length of a side is 4 Cm. What will be the diagonal?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	2	0	5	2.10	1.90	0.00	1.40
2. Understanding problems	1	0	0	1	0.70	0.00	0.00	0.28
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	37	16	0	53	25.70	15.10	0.00	14.85
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	93	25	107	225	64.60	23.60	100.00	63.03
7. Correctly solved	10	63	0	73	6.90	59.40	0.00	20.45
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 6.90%, 59.40% and 0.00% students respectively solved this question correctly and about one fifth in English = 23.60% more than half in Hindi = 64.60%, and Marathi = 100.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-15: What will be 4 % of 300?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	1	1	5	2.10	0.90	0.90	1.40
2. Understanding problems	6	2	0	8	4.20	1.90	0.00	2.24
3. Computational problems	0	4	0	4	0.00	3.80	0.00	1.12
4. Conceptual problems	12	14	6	32	8.30	13.20	5.60	8.96
5. Accidental/Incidental problems	0	0	6	6	0.00	0.00	5.60	1.68
6. Not solved	44	51	91	186	30.60	48.10	85.00	52.10
7. Correctly solved	79	34	3	116	54.90	32.10	2.80	32.49
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 54.90%, 32.10% and 2.80% students respectively solved this question correctly and about one fifth (Hindi = 30.60%, English = 48.10% and Marathi = 85.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-16: The value of $15p^3 \div 3p$ will be:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	8	9	5	22	5.60	8.50	4.70	6.16
2. Understanding problems	2	5	0	7	1.40	4.70	0.00	1.96
3. Computational problems	0	1	1	2	0.00	0.90	0.90	0.56
4. Conceptual problems	6	9	0	15	4.20	8.50	0.00	4.20
5. Accidental/Incidental problems	0	0	3	3	0.00	0.00	2.80	0.84
6. Not solved	47	29	79	155	32.60	27.40	73.80	43.42
7. Correctly solved	81	53	19	153	56.30	50.00	17.80	42.86
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 56.30%, 50.00% and 17.80% students respectively solved this question correctly and about one third in Hindi = 32.60% and English = 27.40% and more than half in Marathi = 73.80% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-17: Solve the equation $\frac{3x+7}{5x-9} = 4$

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	16	9	16	41	11.10	0.90	15.00	11.24
2. Understanding problems	2	0	0	2	1.40	0.00	0.00	0.55
3. Computational problems	3	0	0	3	2.10	0.00	0.00	0.82
4. Conceptual problems	6	5.7	0	11.7	4.20	5.70	0.00	3.21
5. Accidental/Incidental problems	3	0	0	3	2.10	0.00	0.00	0.82
6. Not solved	70	55	90	215	48.60	51.90	84.10	58.95
7. Correctly solved	44	44	1	89	30.60	41.50	0.90	24.40
Total	144	113.7	107	364.7	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 30.60%, 41.50% and 0.90% students respectively solved this question correctly and nearly half in (Hindi = 48.60%, English = 51.90% and Marathi = 84.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-18: In the following bar diagram, find the month in which the difference between consumption of electricity is 30 mega Watts?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	3	0	4	0.70	2.80	0.00	1.12
2. Understanding problems	0	0	0	0	0.00	0.00	0.00	0.00
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	26	5	3	34	18.10	4.70	2.80	9.52
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	39	65	46	150	27.10	61.30	43.00	42.02
7. Correctly solved	78	33	58	169	54.20	31.10	54.20	47.34
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 54.20%, 31.10% and 54.20% students respectively solved this question correctly and about one fifth in Hindi =27.10% and more than half in English = 61.30% and less than half in Marathi = 43.00%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-19: The factors of $2x^2 - 9x + 9$ are:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	16	3	2	21	11.10	2.80	1.90	5.88
2. Understanding problems	0	3	1	4	0.00	2.80	0.90	1.12
3. Computational problems	2	0	0	2	1.40	0.00	0.00	0.56
4. Conceptual problems	16	22	0	38	11.10	20.80	0.00	10.64
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	61	29	103	193	42.40	27.40	96.30	54.06
7. Correctly solved	49	49	1	99	34.00	46.20	0.90	27.73
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 34.00%, 46.20% and 0.90% students respectively solved this question correctly and about less than half in Hindi = 42.40% and English = 27.40% and more than half in Marathi = 96.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-20: In a school, the total strength of students in class 8 is 37. Students scored following marks in out of 10 in the examination. Calculate average.

2, 4, 4, 8, 6, 7, 3, 8, 9, 10, 10, 8, 9, 7, 6, 5, 4, 6, 7, 8, 4, 8, 9, 7, 6, 5, 10, 9, 7, 9, 10, 9, 6, 9, 9, 4, 7.

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	55	6	28	89	38.20	5.70	26.20	24.93
2. Understanding problems	0	12	0	12	0.00	11.30	0.00	3.36
3. Computational problems	5	0	1	6	3.50	0.00	0.90	1.68
4. Conceptual problems	23	34	0	57	16.00	32.10	0.00	15.97
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	41	50	68	159	28.50	47.20	63.60	44.54
7. Correctly solved	20	4	10	34	13.90	3.80	9.30	9.52
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 13.90%, 3.80% and 9.30% students respectively solved this question correctly and about less than half in Hindi = 28.50% and English = 47.20% and more than half in Marathi = 63.60% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Class 8, Level-2

Question-1: Solve in expended form of $(p+q+3)^2$:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	14	5	0	19	9.70	4.70	0.00	5.32
2. Understanding problems	0	2	0	2	0.00	1.90	0.00	0.56
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	6	64	1	71	4.20	60.40	0.90	19.89
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	58	24	101	183	40.30	22.60	94.40	51.26
7. Correctly solved	66	11	5	82	45.80	10.40	4.70	22.97
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 45.80%, 10.40% and 4.70% students respectively solved this question correctly and about Hindi = 40.30%, English = 22.60% and Marathi = 94.40% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-2: What are Factors of $2y^2-4y-30$:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	24	3	7	34	16.70	2.80	6.50	9.52
2. Understanding problems	3	6	0	9	2.10	5.70	0.00	2.52
3. Computational problems	6	2	0	8	4.20	1.90	0.00	2.24
4. Conceptual problems	15	27	1	43	10.40	25.50	0.90	12.04
5. Accidental/Incidental problems	1	1	0	2	0.70	0.90	0.00	0.56
6. Not solved	54	52	92	198	37.50	49.10	86.00	55.46
7. Correctly solved	41	15	7	63	28.50	14.20	6.50	17.65
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 28.50%, 14.20% and 6.50% students respectively solved this question correctly and about less than half in Hindi = 37.50% and English = 49.10% and Marathi = 86.00%) students, not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-3: Calculate square root of the fraction $\frac{625}{1296}$:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	5	3	1	9	3.50	2.80	0.90	2.52
2. Understanding problems	3	9	1	13	2.10	8.50	0.90	3.64
3. Computational problems	1	1	0	2	0.70	0.90	0.00	0.56
4. Conceptual problems	8	42	1	51	5.60	39.60	0.90	14.29
5. Accidental/Incidental problems	0	0	1	1	0.00	0.00	0.90	0.28
6. Not solved	66	41	76	183	45.80	38.70	71.00	51.26
7. Correctly solved	61	10	27	98	42.40	9.40	25.20	27.45
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 42.40%, 9.40% and 25.20% students respectively solved this question correctly and about half (Hindi = 45.80%, English = 38.70%) and more than half in Marathi = 71.00% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-4: Calculate cube root of - 2197:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	4	6	0	10	2.80	5.70	0.00	2.80
2. Understanding problems	4	4	0	8	2.80	3.80	0.00	2.24
3. Computational problems	7	1	0	8	4.90	0.90	0.00	2.24
4. Conceptual problems	0	31	0	31	0.00	29.20	0.00	8.68
5. Accidental/Incidental problems	0	1	0	1	0.00	0.90	0.00	0.28
6. Not solved	62	39	102	203	43.10	36.80	95.30	56.86
7. Correctly solved	67	24	5	96	46.50	22.60	4.70	26.89
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 46.50%, 22.60% and 4.70% students respectively solved this question correctly and near to half Hindi = 43.10%, less than English = 36.80% and more than Marathi = 95.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-5: Solve $(16)^{1/4} \times (81)^{1/4}$ is:-

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	4	0	7	2.10	3.80	0.00	1.96
2. Understanding problems	6	6	2	14	4.20	5.70	1.90	3.92
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	29	21	22	72	20.10	19.80	20.60	20.17
5.Accidental/Incidental problems	0	2	0	2	0.00	1.90	0.00	0.56
6. Not solved	92	60	82	234	63.90	56.60	76.60	65.55
7. Correctly solved	14	13	1	28	9.70	12.30	0.90	7.84
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 9.70%, 12.30% and 0.90% students respectively solved this question correctly and about one fifth (Hindi = 63.90%, English = 56.60% and Marathi = 76.60%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-6: $(x^2 + 6x + 8) \div (x + 4)$ solve it:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	11	6	4	21	7.60	5.70	3.70	5.88
2. Understanding problems	4	2	0	6	2.80	1.90	0.00	1.68
3. Computational problems	5	1	0	6	3.50	0.90	0.00	1.68
4. Conceptual problems	10	33	3	46	6.90	31.10	2.80	12.89
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	45	37	90	172	31.30	34.90	84.10	48.18
7. Correctly solved	69	27	10	106	47.90	25.50	9.30	29.69
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 47.90%, 25.50% and 9.30% students respectively solved this question correctly and about one third in Hindi = 31.30% and English = 34.90% and more than half in Marathi = 84.10% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-7: $\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ **equals to:**

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	23	3	0	26	16.00	2.80	0.00	7.28
2. Understanding problems	0	4	0	4	0.00	3.80	0.00	1.12
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.28
4. Conceptual problems	18	20	18	56	12.50	18.90	16.80	15.69
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	75	66	89	230	52.10	62.30	83.20	64.43
7. Correctly solved	28	12	0	40	19.40	11.30	0.00	11.20
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 19.40%, 11.30% and 0.00% students respectively solved this question correctly and about one fifth (Hindi = 52.10%, English = 62.30% and Marathi = 83.20%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-8: Two ratio of numbers 7:8 and its total to 45. Find the numbers.

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	32	2	0	34	22.20	1.90	0.00	9.52
2. Understanding problems	4	8	1	13	2.80	7.50	0.90	3.64
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.28
4. Conceptual problems	4	9	11	24	2.80	8.50	10.30	6.72
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	102	71	93	266	70.80	67.00	86.90	74.51
7. Correctly solved	2	15	2	19	1.40	14.20	1.90	5.32
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 1.40%, 14.20% and 1.90% students respectively solved this question correctly and about more than half (Hindi = 70.80%, English = 67.00% and Marathi = 86.90%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-9: Calculate interest at the rate of 5% on Rs. 1,000 for 2 years.-

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	5	5	4	14	3.50	4.70	3.70	3.92
2. Understanding problems	2	4	0	6	1.40	3.80	0.00	1.68
3. Computational problems	2	0	1	3	1.40	0.00	0.90	0.84
4. Conceptual problems	17	7	5	29	11.80	6.60	4.70	8.12
5. Accidental/Incidental problems	0	0	6	6	0.00	0.00	5.60	1.68
6. Not solved	53	63	67	183	36.80	59.40	62.60	51.26
7. Correctly solved	65	27	24	116	45.10	25.50	22.40	32.49
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 45.10%, 25.50% and 22.40% students respectively solved this question correctly and about one third in Hindi = 36.80%, and more than half in English = 59.40% and Marathi = 62.60% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-10: If $a \times b < c \times d$ equals to:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	2	0	1	3	1.40	0.00	0.90	0.84
2. Understanding problems	0	4	0	4	0.00	3.80	0.00	1.12
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	57	5	35	97	39.60	4.70	32.70	27.17
5.Accidental/Incidental problems	1	0	0	1	0.70	0.00	0.00	0.28
6. Not solved	46	80	65	191	31.90	75.50	60.70	53.50
7. Correctly solved	38	17	6	61	26.40	16.00	5.60	17.09
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 26.40%, 16.00% and 5.60% students respectively solved this question correctly and about one fifth (Hindi = 31.90%, English = 75.50% and Marathi = 60.70%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-11: A table was sold for Rs. 935 after a discount of 15%; what was its written price?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	5	2	0	7	3.50	1.90	0.00	1.96
2. Understanding problems	2	6	1	9	1.40	5.70	0.90	2.52
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	54	11	3	68	37.50	10.40	2.80	19.05
5.Accidental/Incidental problems	0	1	0	1	0.00	0.90	0.00	0.28
6. Not solved	73	74	103	250	50.70	69.80	96.30	70.03
7. Correctly solved	10	12	0	22	6.90	11.30	0.00	6.16
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 6.90%, 11.30% and 0.00% students respectively solved this question correctly and about more than half (Hindi = 50.70%, English = 69.80% and Marathi = 96.30%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-12: Rita and Renu are studying in same class. The marks obtain by them in three subjects are given below:

	Physics	Chemistry	Mathematics
Rita	78	76	74
Renu	72	82	74

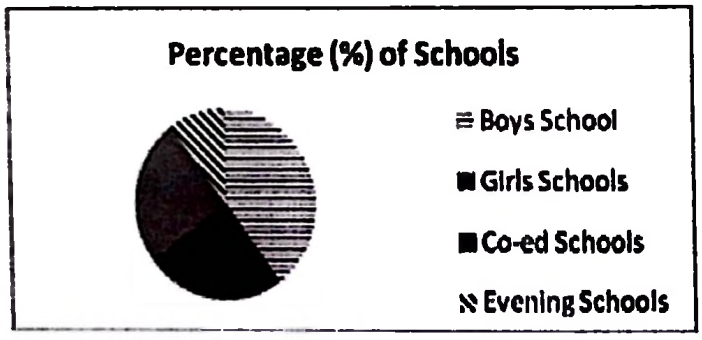
Which of the average scores statement is correct in the given below?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	2	0	2	0.00	1.90	0.00	0.56
2. Understanding problems	0	4	0	4	0.00	3.80	0.00	1.12
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	53	15	44	112	36.80	14.20	41.10	31.37
5.Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	26	79	59	164	18.10	74.50	55.10	45.94
7. Correctly solved	65	6	4	75	45.10	5.70	3.70	21.01
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 45.10%, 5.70% and 3.70% students respectively solved this question correctly and about one fifth (Hindi = 18.10%, English = 74.50% and Marathi = 55.10%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-13: The pie-diagram given below shows the distribution of four different types of schools: Boys schools, Girls schools, Co-ed schools and Evening schools.



Which of the following sentence is correct?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	1	0	1	0.00	0.90	0.00	0.28
2. Understanding problems	0	7	0	7	0.00	6.60	0.00	1.96
3. Computational problems	0	0	39	39	0.00	0.00	36.40	10.92
4. Conceptual problems	81	3	0	84	56.30	2.80	0.00	23.53
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	25	85	58	168	17.40	80.20	54.20	47.06
7. Correctly solved	38	10	10	58	26.40	9.40	9.30	16.25
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 26.40%, 9.40% and 9.30% students respectively solved this question correctly and about one fifth (Hindi = 17.40%, English = 80.20% and Marathi = 54.20%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-14: A rectangle is formed with 30 cm long thin wire. If, width of this rectangle is 6 cm. what is its length?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	21	1	0	22	14.60	0.90	0.00	6.16
2. Understanding problems	3	9	0	12	2.10	8.50	0.00	3.36
3. Computational problems	2	0	0	2	1.40	0.00	0.00	0.56
4. Conceptual problems	8	9	13	30	5.60	8.50	12.10	8.40
5. Accidental/Incidental problems	0	0	3	3	0.00	0.00	2.80	0.84
6. Not solved	90	38	91	219	62.50	35.80	85.00	61.34
7. Correctly solved	20	49	0	69	13.90	46.20	0.00	19.33
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 13.90%, 46.20% and 0.00% students respectively solved this question correctly and about one third in English = 35.80% and more than half in Hindi = 62.50%, and Marathi = 85.00% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-15: A new bridge is constructed; the average time taken by a bus to travel from one city to another is reduced from 50 minutes to 40 minutes. What is the percentage decrease in time taken to travel between two cities?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	59	0	5	64	41.00	0.00	4.70	17.93
2. Understanding problems	0	6	0	6	0.00	5.70	0.00	1.68
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	5	4	0	9	3.50	3.80	0.00	2.52
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	79	57	99	235	54.90	53.80	92.50	65.83
7. Correctly solved	1	39	3	43	0.70	36.80	2.80	12.04
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 0.70%, 36.80% and 2.80% students respectively solved this question correctly and about more than half in Hindi = 54.90%, English = 53.80% and Marathi = 92.50% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

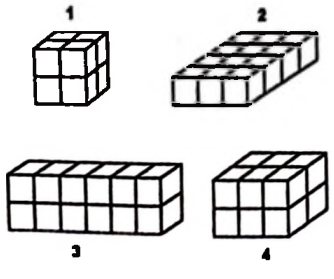
Question-16: Area of a square is 7056 Sq. cm. what will be the length of its one side?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	3	1	0	4	2.10	0.90	0.00	1.12
2. Understanding problems	0	2	0	2	0.00	1.90	0.00	0.56
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	9	2	15	26	6.30	1.90	14.00	7.28
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	109	59	86	254	75.70	55.70	80.40	71.15
7. Correctly solved	23	42	6	71	16.00	39.60	5.60	19.89
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 16.00%, 39.60% and 5.60% students respectively solved this question correctly and about more than half in Hindi = 75.70%, English = 55.70% and Marathi = 80.40% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-17: In the figures below, small blocks are put together to get bigger blocks. If all the small blocks are of the same size, which one of the bigger blocks will have a different volume than the others?



Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	0	1	0	1	0.00	0.90	0.00	0.28
2. Understanding problems	0	16	0	16	0.00	15.10	0.00	4.48
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.28
4. Conceptual problems	93	13	33	139	64.60	12.30	30.80	38.94
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	29	74	46	149	20.10	69.80	43.00	41.74
7. Correctly solved	22	1	28	51	15.30	0.90	26.20	14.29
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 15.30%, 0.90% and 26.20% students respectively solved this question correctly and about one fifth in Hindi = 20.10%, more than half in English = 69.80% and less than half in Marathi = 43.00% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-18: The age of Ravi's father is 5 more than three times of Ravi's age. If the age of Ravi's father is X years, then how will you represent Ravi's age?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	0	1	0.70	0.00	0.00	0.28
2. Understanding problems	1	3	1	5	0.70	2.80	0.90	1.40
3. Computational problems	0	1	0	1	0.00	0.90	0.00	0.28
4. Conceptual problems	49	34	8	91	34.00	32.10	7.50	25.49
5. Accidental/Incidental problems	0	0	0	0	0.00	0.00	0.00	0.00
6. Not solved	69	68	96	233	47.90	64.20	89.70	65.27
7. Correctly solved	24	0	2	26	16.70	0.00	1.90	7.28
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 16.70%, 0.00% and 1.90% students respectively solved this question correctly and about near to half and more than half (Hindi = 47.90%, English = 64.20% and Marathi = 89.70%) students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-19: The task of harvesting groundnuts in a field is completed by 15 women in 8 days. How many women will be needed is the task has to be completed within 6 days?

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	11	1	1	13	7.60	0.90	0.90	3.64
2. Understanding problems	0	3	0	3	0.00	2.80	0.00	0.84
3. Computational problems	0	0	0	0	0.00	0.00	0.00	0.00
4. Conceptual problems	31	20	15	66	21.50	18.90	14.00	18.49
5. Accidental/Incidental problems	0	1	0	1	0.00	0.90	0.00	0.28
6. Not solved	87	32	91	210	60.40	30.20	85.00	58.82
7. Correctly solved	15	49	0	64	10.40	46.20	0.00	17.93
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 10.40%, 46.20% and 0.00% students respectively solved this question correctly and about one third in English = 30.20% and more than half in Hindi = 60.40%, and Marathi = 85.00% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Question-20: Measure of adjacent angles of a parallelogram measure $(5x-7)^o$ and $(4x+25)^o$ then the other angles will measure:

Medium wise frequency and percentage of problems are given in the following table -

Sl. No and Category	Medium wise problems in numbers				Medium wise problems in percentage			
	Hindi	English	Marathi	Overall	Hindi	English	Marathi	Overall
1. Procedure problems	1	0	0	1	0.70	0.00	0.00	0.28
2. Understanding problems	1	9	0	10	0.70	8.50	0.00	2.80
3. Computational problems	0	2	0	2	0.00	1.90	0.00	0.56
4. Conceptual problems	18	8	14	40	12.50	7.50	13.10	11.20
5. Accidental/Incidental problems	0	2	0	2	0.00	1.90	0.00	0.56
6. Not solved	121	47	91	259	84.00	44.30	85.00	72.55
7. Correctly solved	3	38	2	43	2.10	35.80	1.90	12.04
Total	144	106	107	357	100.0	100.0	100.0	100.0

In the Hindi, English and Marathi mediums only 2.10%, 35.80% and 1.90% students respectively solved this question correctly and about more than half in Marathi = 85.00% and Hindi = 84.00%, and less than half in English = 44.30% students not attempted at all. Rest of the percentage of students solved the question but not correctly.

Objective 4.02.03: TO ANALYZE THE TYPE OF PROCESS MISTAKES COMMITTED BY STUDENTS RESIDING IN SLUMS DURING MATHEMATICS PROCESS.

While attempting the question, particularly in mathematics, students are committing different type of process mistakes like mistake of calculation, mistake of taking into consideration into earlier steps, coping of in correct numerical digits from early steps etc. In the present study based on the analysis of answers of the questions these types of process mistake are given below-

Table No. 4.2.3.1

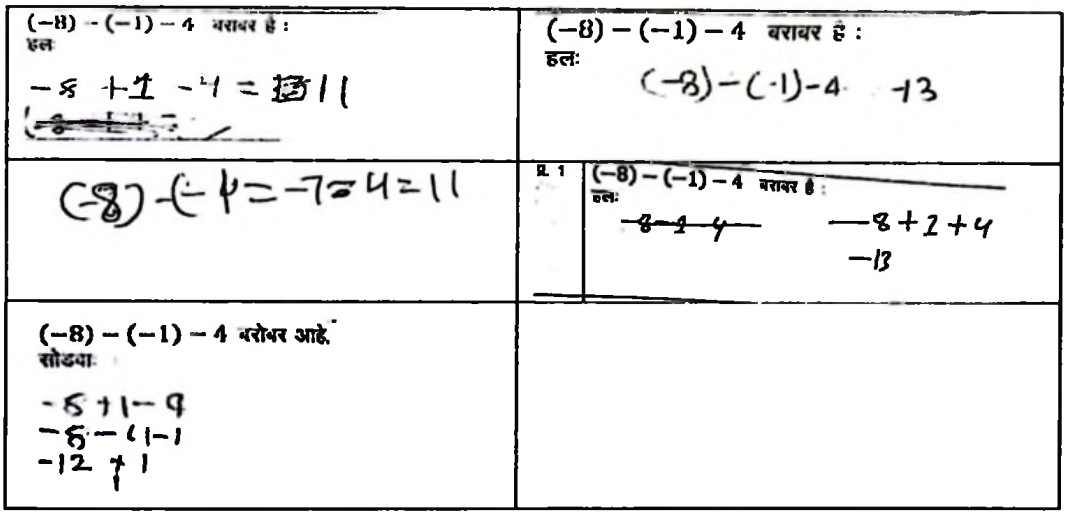
Process Mistake Committed by Class VI Students of Maharashtra residing in slums during Mathematics Process

Level-1

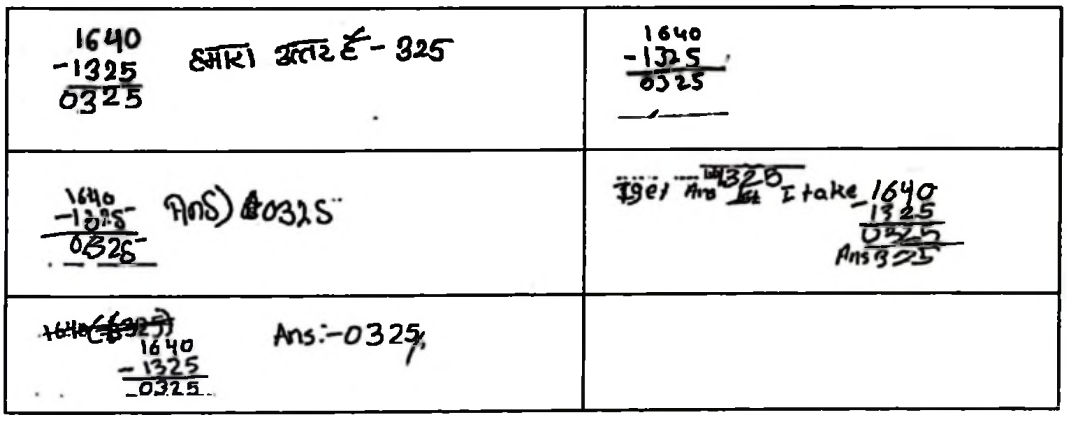
Question-1: (–8) – (–1) – 4 is equal to:

(–8) – (–1) – 4 सोडवा: −8+1−1 −8 −4−1 −12	−8+1 = 4 −5−4+1 −12+4 11−
−8+1−4 −8−4+1 −12+1 1	−8+1−4 −8−4+1 −12+1 −11
−8+1−4 −8−4+1 −12+1 −11	−8+1−4 −8 −4+1 −12+4 11−

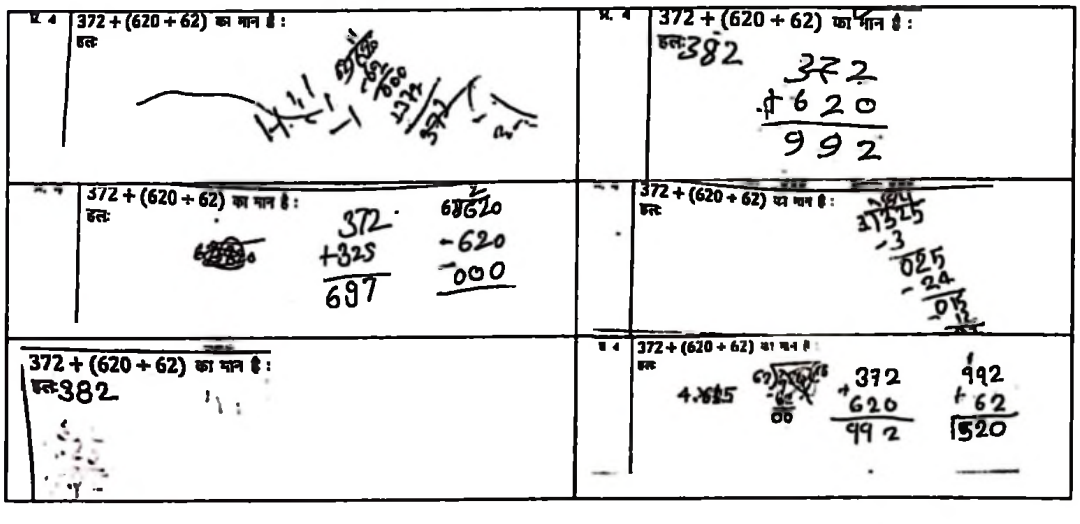
8 4 13	+8 +1 4 13
(-8)-(-1)-4 (+8)+-(1)	(-8)-1)-4(+8+1)
11 8+ — 4 87	-8+14 -7-4 11 11
-8+1-4 -7-4 -1 11	8 -1 -4 = 13
I: (-8)-(-1)-4 is equal to : Solution: (-8)-(-1)-. +8(8)	(-8)- (-1)(-4) = 13
(-8) - (-1) - 4 is eq Solution: (-8)-(-1) -4 -8+1=9 -4+9=13	(+8)-(-1) 8+8+
(-8) - (-1) - 4 is equal to : Solution: (-8)-(-1)(-4) = 13	(-8) +(-1) + -4 183
(-8) - (-1) - 4 बराबर है हल: + 9 - 4 13	(-8) - (-1) - 4 बराबर है : हल: -8 | 2722 1 7
(-8) - (-1) - 4 बराबर है : हल: (-8)-(-7)-4=11 11	प्र. 1 (-8) - (-1) - 4 बराबर है : हल: +9-4 5 13



Question-3: The value of 1640 – 1325 is:

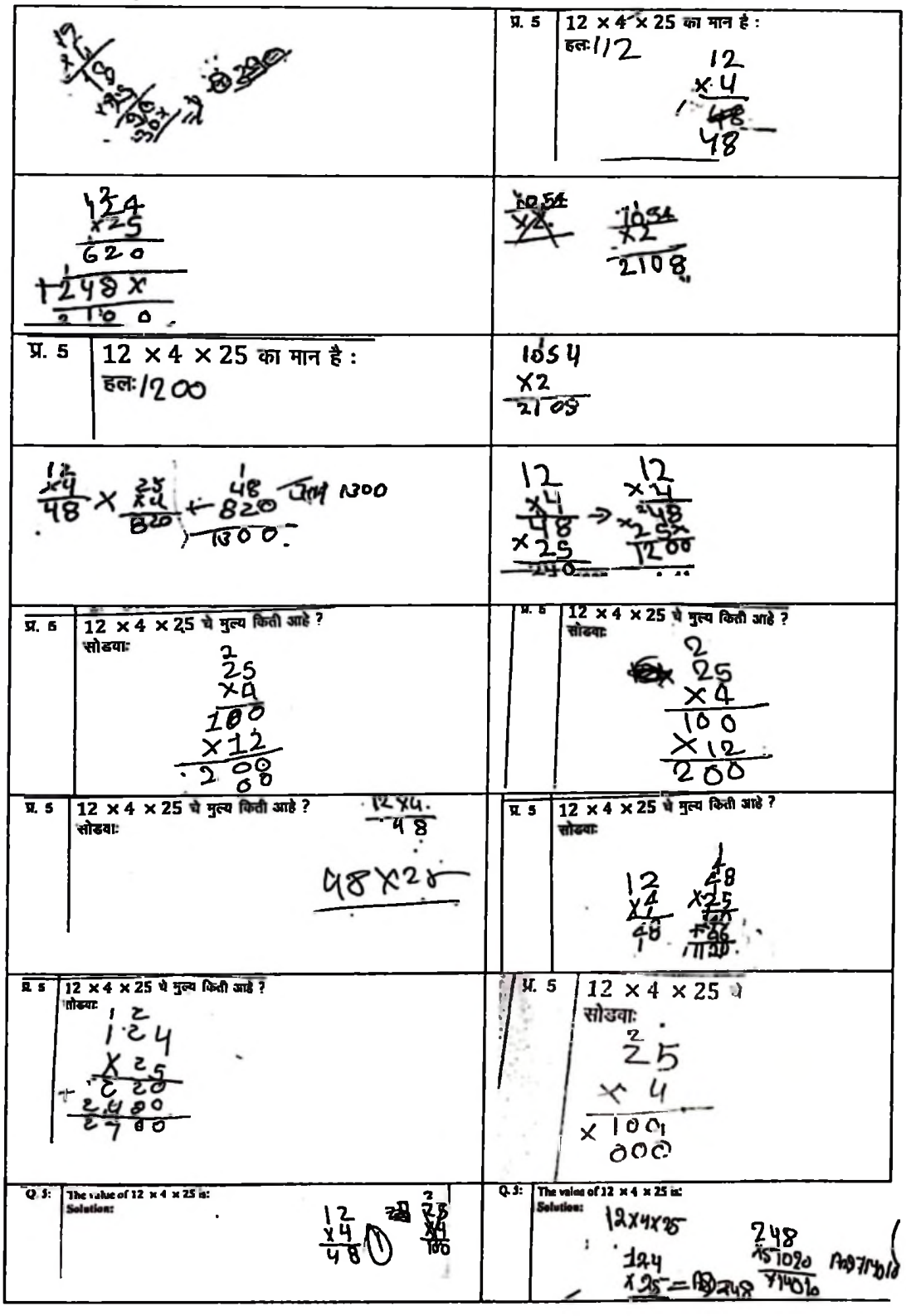


Question-4: The value of 372 + (620÷62) is:



4 372 + (620 ÷ 62) का मान है : हल: 372+(620÷62) उसका मान 382 है	प्र. 4 372 + (620 ÷ 62) का मान है : हल: 372 +1 3720 उत्तर 3720
प्र. 4 372 + (620 ÷ 62) का मान है : हल: 62)620 -6 018 -18 00	प्र. 4 372 + (620 ÷ 62) चे मुल्य किती आहे ? सोडवा: 620 ÷62 620 ÷62 32 62)620 -6 020 -40
प्र. 4 372 + (620 ÷ 62) चे मुल्य किती आहे ? सोडवा: 32 62)620 -6 020 090	372+(620÷62
प्र. 4 372 + (620 ÷ 62) चे मुल्य किती आहे ? सोडवा: 1 62)620 62 3720	प्र. 4 372 + (620 ÷ 62) चे मुल्य किती आहे ? सोडवा: 372 +620 992
प्र. 4 372 + (620 ÷ 62) चे मुल्य किती आहे ? सोडवा: 10 62)620 -62 000 -0 0	प्र. 4 372 + (620 ÷ 62) चे मुल्य किती आहे ? सोडवा: 62)620 1010 62)620 10 372 382
प्र. 4 372 + (620 ÷ 62) चे मुल्य किती आहे ? सोडवा: 010 62)620 -0 32 -62 000 -0 372 382	Q. 4 The value of 372 + (620÷62) is: Solution: 620 ÷62 Ans 2240
I get Ans by Take 372 +620 992 3720 62)62 then I ... 992 +12 3720 then I get Ans	372 620 +62 1612
The value of 372 + (620÷62) is: Solution: 372 +620 992 62)620 000 62)992 -382 282	

Question-5: The value of 12 × 4 × 25 is:



Q. 5:	The value of 12 × 4 ×.25 is: Solution: 12 × 4 = 48 25 × 48 = 200 + 1000	2 x 4 x 25 is: 1200 I get Ans by I do Ethen 12×4=48 I get Ans 48×2=16
Q. 5:	The value of 12 × 4 × 25 is: Solution: 12 × 4 = 18 25 × 4 = 82	

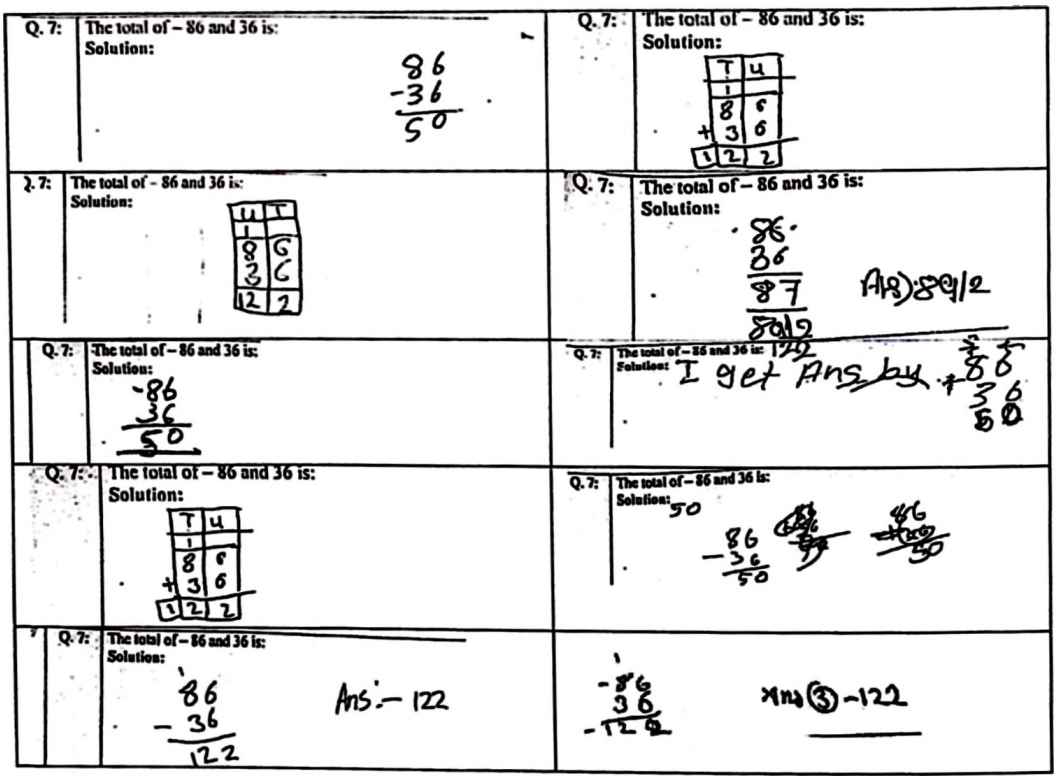
Question-6: The total of – 29 and – 70 is:

–29 व –70 का योग है : हल: 1200 − 2910 = 1210	प्र. 6 –29 व –70 का योग है : हल: 41
प्र. 6 –29 व –70 का योग है : हल: 1200 − 2970	हल: 29 + 70 = 99
प्र. 6 –29 व –70 का योग है : हल: 70 + 29 = 99 ✓ ; 70 − 29 = 41 ✓	प्र. 6 –29 व –70 का योग है : हल: 29 + 70 = 99
6 –29 आणि -70 ची बेरीज करा. सोडवा: 70 − 29 = 99	–29 आणि -70 ची बेरीज करा. सोडवा: 70 − 29 = 99
प्र. 6 –29 आणि -70 ची बेरीज करा. सोडवा: 70 + 29 = 90	Q. 6: The total of - 29 and – 70 is: Solution: 610 − 29 = 41
Q. 6: The total of - 29 and – 70 is: Solution: 610 − 29 = 41	Q. 6: The total of - 29 and – 70 is: Solution: 610 − 29 = −41

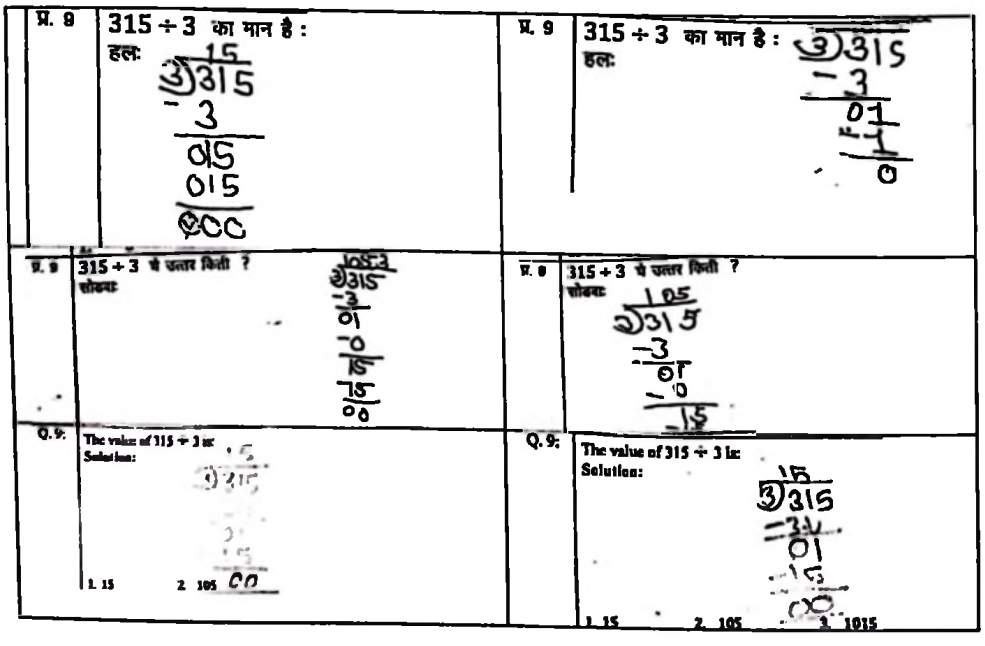
Q. 6: The total of - 29 and - 70 is: Solution: 29 99	Q. 6: The total of - 29 and -- 70 is: Solution: -29 - 70 = -41
Q. 6: The total of - 29 and – 70 is: Solution: 610 -29 41	Q. 6: The total of - 29 and – 70 is: Solution: -29 41
Q. 6: The total of - 29 and – 70 is: Solution: -29 41	Q. 6: The total of - 29 and – 70 is: Solution: -29 41
Q. 6: The total of - 29 and – 70 is: Solution: -29 41	Q. 6: The total of - 29 and – 70 is: Solution: -29 -41
Q. 6: The total of - 29 and – 70 is: 99 Solution: I get Ans by +29 +70 then I 99 get Ans	Q. 6: The total of - 29 and – 70 is: Solution: -29 41
Q. 6: The total of - 29 and – 70 is: Solution: -29 41	-29 -41 Ans: -41
Q. 6: The total of - 29 and – 70 is: Solution: -70 8 29 -10 58	

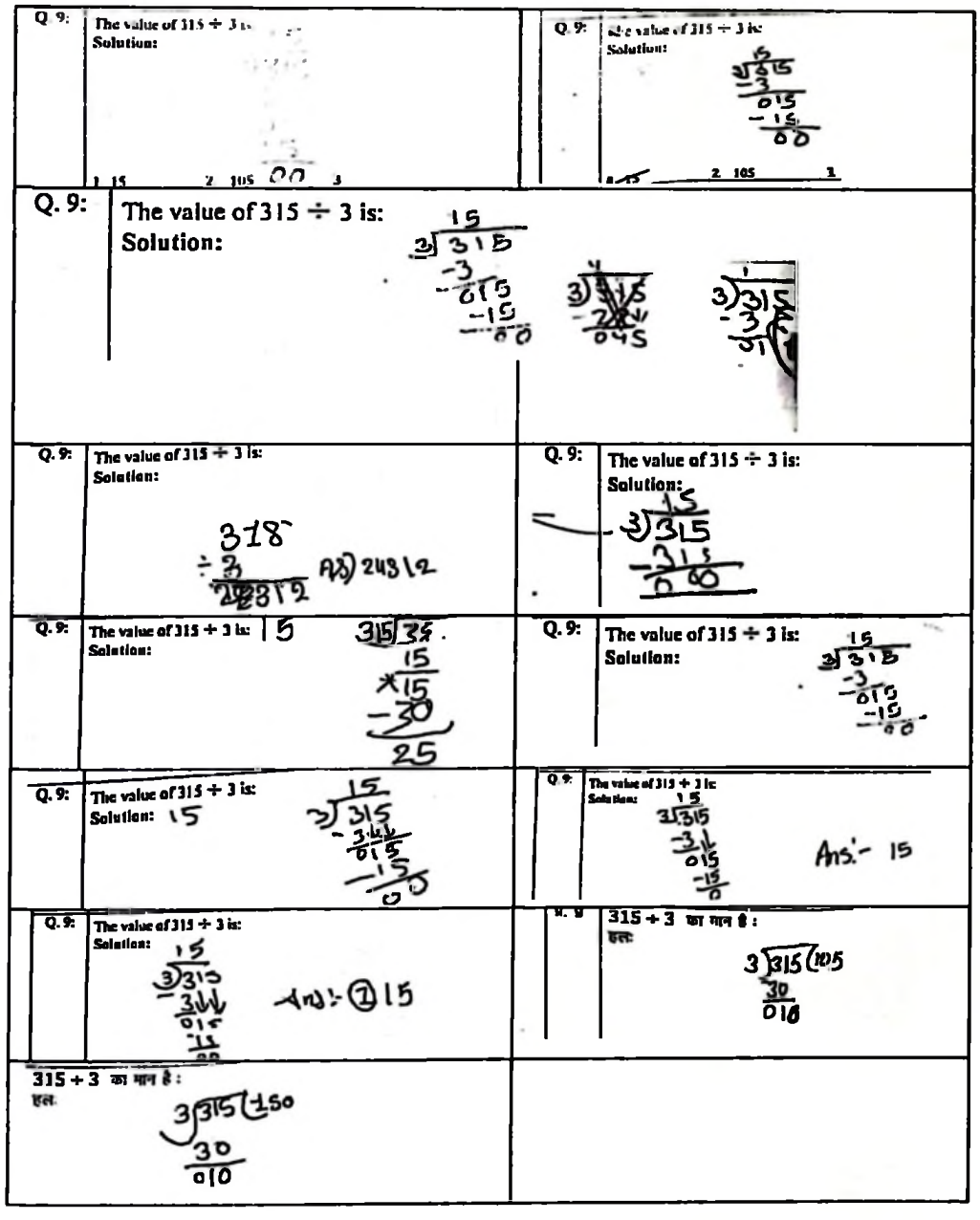
Question-7: The total of – 86 and 36 is:

प्र. 7 –86 आणि 36 ची बेरीज किती ? उत्तर: +86 36 122	प्र. 7 –86 आणि 36 बरोबर किती ? सोडवा: 86 +36 122
प्र. 7 –86 आणि 36 बरोबर किती ? सोडवा: 86 +36 122	प्र. 7 –86 आणि 36 बरोबर किती ? सोडवा: 86 36 50
Q. 7: The total of – 86 and 36 is: Solution: -86 36 50	Q. 7: The total of – 86 and 36 is: Solution: 86 -36 50

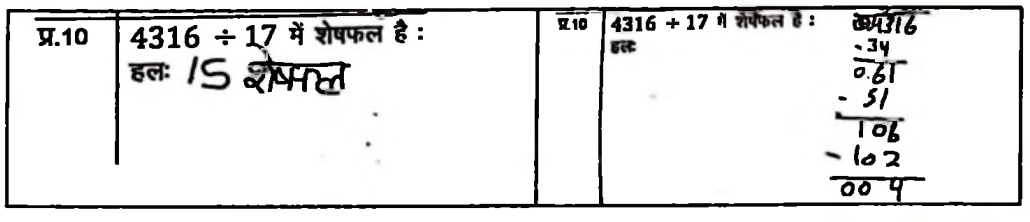


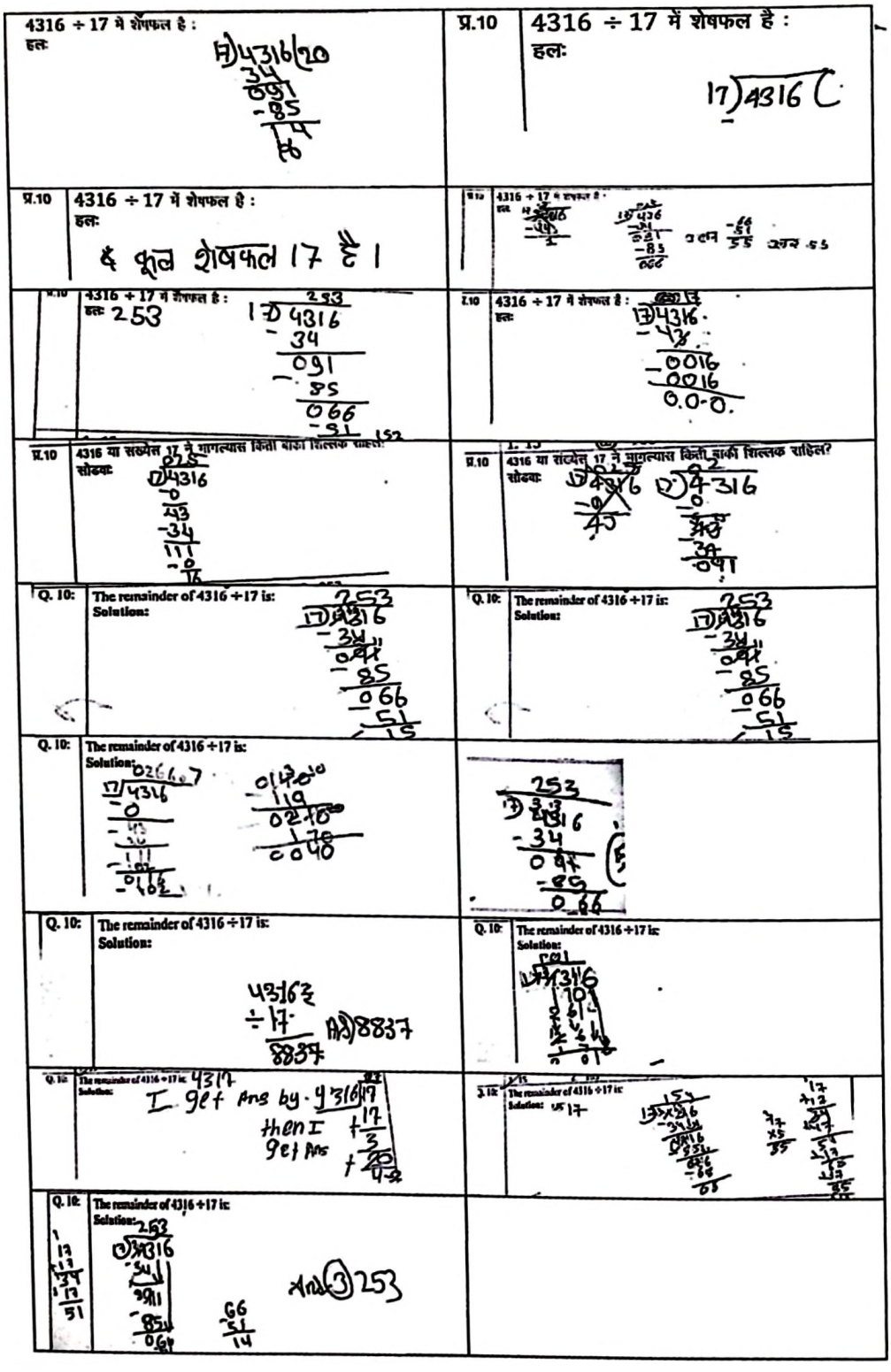
Question-9: The value of 315 ÷ 3 is:



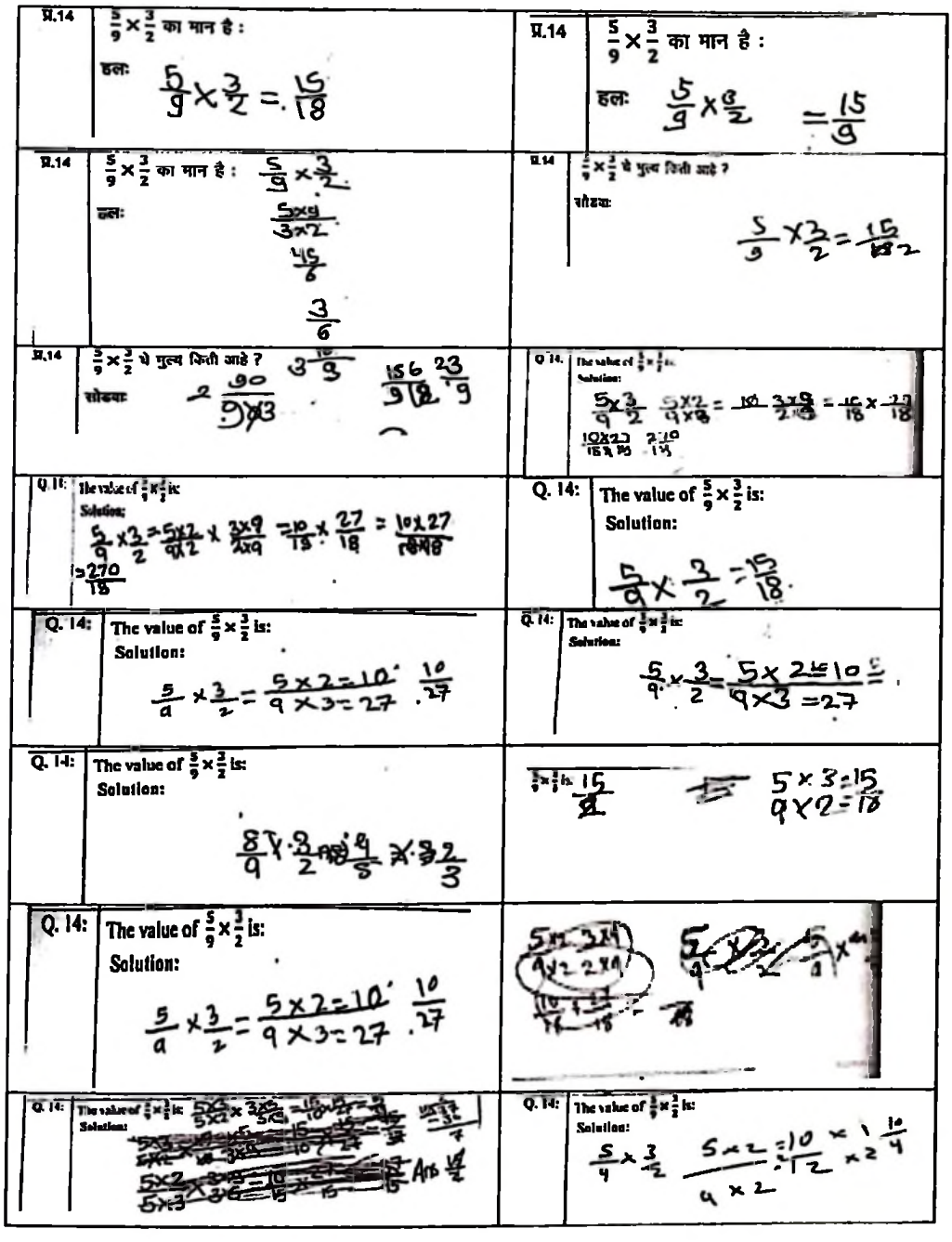


Question-10: The remainder of 4316 ÷17 are:

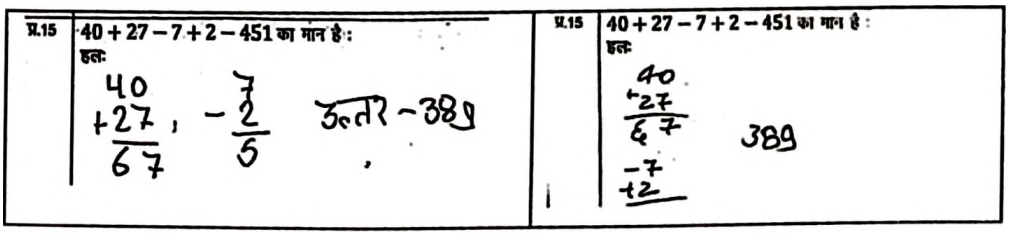


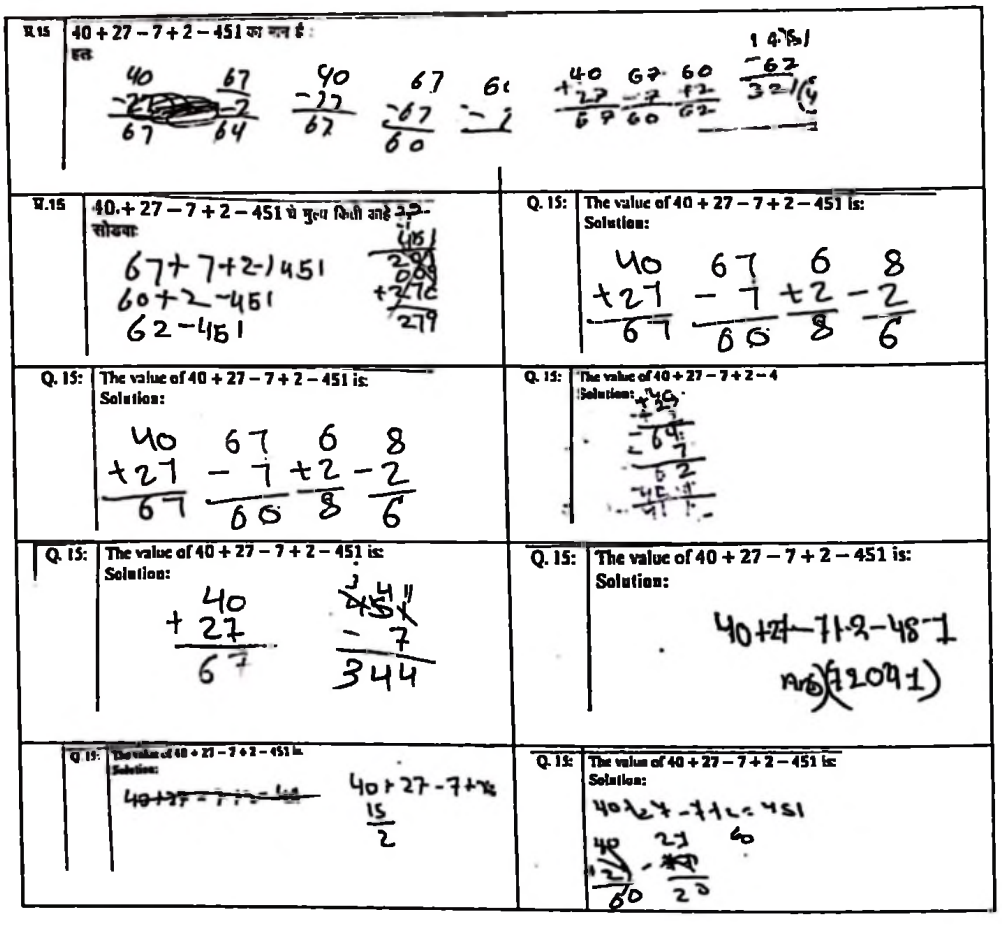


Question-14: The value of $\frac{5}{9} \times \frac{3}{2}$ is:

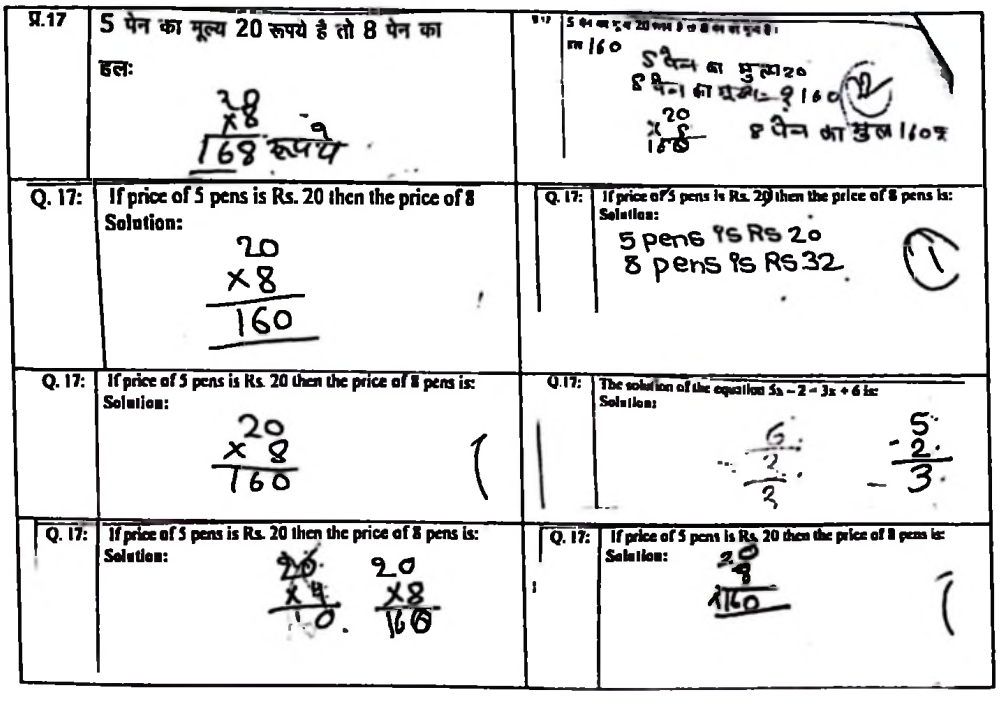


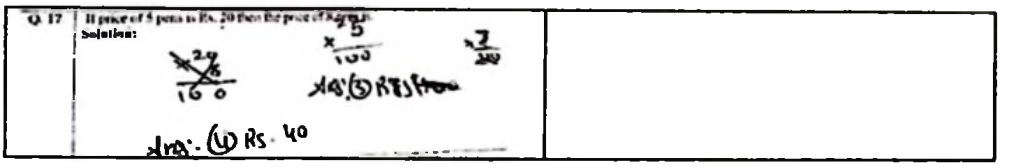
Question-15: The value of 40 + 27 − 7 + 2 − 451 is:



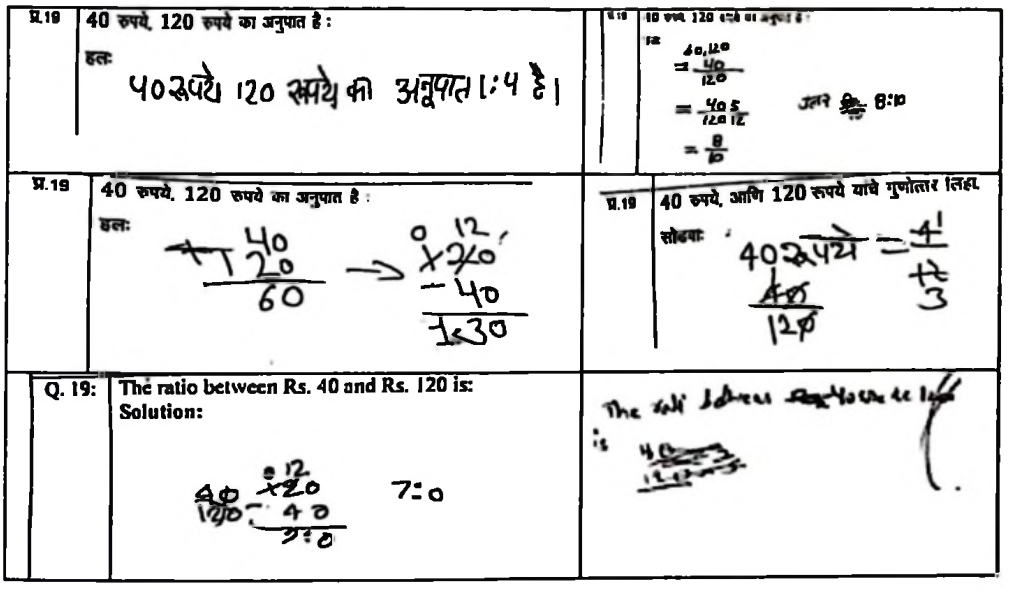


Question-17: If price of 5 pens is Rs. 20 then the price of 8 pens is:



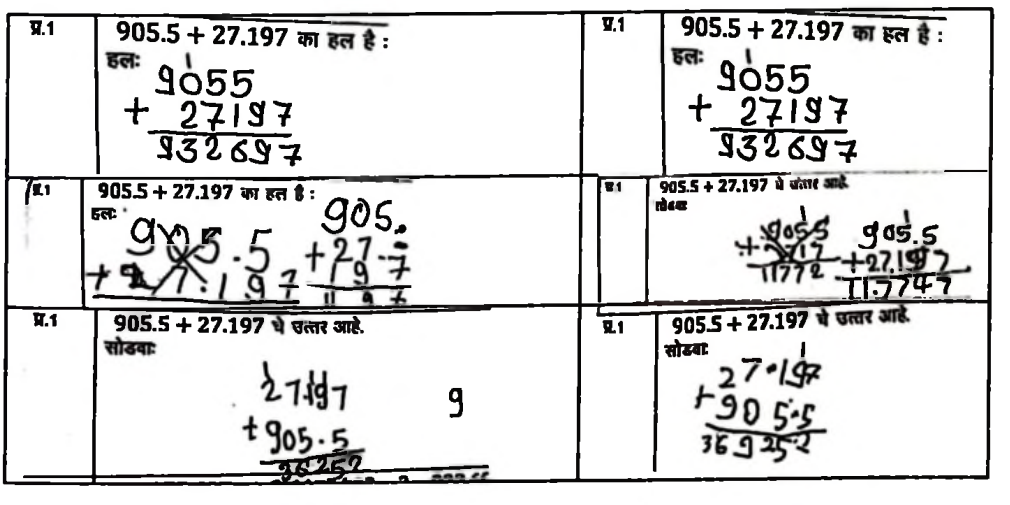


Question-18: 0.275 can be written in the form of fraction, as:



Class VI, LEVEL-2

Question-1: The value of 905.5 + 27.197 is :



प्र.1	905.5 + 27.197 चे उत्तर आहे. सोडवा: 905.5 + 27.197 932.697	प्र.1	905.5 + 27.197 चे उत्तर आहे. सोडवा: 905.5 +27.197 932.697
Q.1:	The value of 905.5 + 27.197 is: Solution: 27.197 + 905.5 32.25.2 1 1 1905.5 +27.197 32.25.2		27.197 + 905.5 32.25.2 1 1 1905.5 +27.197 32.25.2

Question 2: H.C.F. of 45 and 30 is:

प्र. 2	45 और 30 का मसावि है : हल: 45 - 30 15	प्र. 2	45 और 30 का मसावि है : हल: 45 - 30 15
प्र. 2	45 और 30 का मसावि है : हल: + 45 30 45	प्र. 2	45 और 30 का मसावि है : हल: - 45 30 15
प्र. 2	45 आणि 30 चा मसावि आहे. सोडवा: 15 | 15 45 3 5 0 : 15	प्र. 2	45 आणि 30 चा मसावि आहे. सोडवा: 45 45|0 30 15 Ans
प्र. 2	15 आणि 30 चा मसावि आहे. सोडवा: 45 = 1, 3, 5, 9, 15, 45 30 = 1, 2, 3, 5, 6, 15, 30 सामाईक विभाजक मसावि = 15 (1, 3, 5, 15)		factors of 45: 1, 3, 5, 9, 15, 45 factors of 30 = 5, 1, 2, 3, 30
Q.2:	H.C.F. of 45 and 30 is: Solution: 45 - 30 15	Q.2:	1 factors of 45 = 0, 3, 5, 9, 45 factors of 30 = 30, 0, 3, 5, etc. ∴ H.C.F. = 1, 2, 5
Q.2:	H.C.F. of 45 and 30 is: Solution: 45, 30 45 → 1, 5, 9, 15, 45 30 → 1, 3, 5, 6, 10, 30 Factors -	Q.2:	H.C.F. of 45 and 30 is: Solution: 45 → 1, 5, 9, 15, 45 30 → 1, 2, 3, 5, 15, 30
	45: 1, 3, 5, 9, 15, 25, 15, 45. 30: 1, 3, 5, 6, 9, 10, 30	Q.2:	H.C.F. of 45 and 30 is: Solution: 45 → 0, 5, 9, 45 30 → 0, 3, 5, 6, 10, 30

Q.2: H.C.F. of 45 and 30 is: Solution: 45 = 1, 5, 9, 45 30 = 1, 2, 3, 5, 6, 10, 30	Q.2: H.C.F. of 45 and 30 is: Solution: 45 → 1, 3, 5 30 → 1, 2, 3, 5
Q.2: H.C.F. of 45 and 30 is: Solution: 45 30 89 Ans) 89.	5 table 5×1=5 5×2=10 5×3=15 5×4=20 5×5=25
Q.2: H.C.F. of 45 and 30 is: Solution: 45 30 0×30 45 135× 1410	Q.2: H.C.F. of 45 and 30 is: Solution: 45 → 1, 3, 5, 9, 45 30 → 1, 2, 3, 5, 6, 10, 30
Q.2: H.C.F. of 45 and 30 is: Solution: 45 30 0×30 45 135× 1410	5 | 45, 30 3 | 9, 6 3 | 3, 2 2 | 1, 2 1, 1 Ans:- 5×3×3×2=90 Ans:- 90
Q.2: H.C.F. of 45 and 30 is: Solution: 5 | 45, 30 = 5×3×3×2 3 | 9, 6 3 | 3, 2 2 | 1, 2 1, 1 Ans:- ③ 90	Q.2: H.C.F. of 45 and 30 is: Solution: 45 30-30 30 30 30

Question-3: The simplified form of 20 + {10 − 5 + (7 − 3)} is:

29 20 + 10 = 30 30 − 5 = 25 25 + 7 = 32 32 − 3 = 29	प्र. 3 20 + {10 − 5 + (7 − 3)} का सरलतम रूप हल: 20 + 10 − 5 + 7 − 3 = 29
(20 + 10 = 30 + 10 − 5) (7 − 3) = + 20 + 30 = 50 = 39	प्र. 3 20 + {10 − 5 + (7 − 3)} चे सरलरूप आहे. सोडवा: 20 + 10 − 5 + 7 − 3 24
प्र. 3 20 + {10 − 5 + (7 − 3)} चे सरलरूप आहे. सोडवा: 20 × 10 − 5 + 27 20 + (10 − 1(20 + 9 29	7 − 3 = 4 10 − 5 = 5

Q.3:	The simplified form of 20 + {10 – 5 + (7 – Solution:	Q. 3	The value of 1640 – 1325 is: Solution:
Q.3:	The simplified form of 20 + {10 – 5 + (7 – 3)} is: Solution:		
Q.3:	The simplified form of 20 + {10 – 5 + (7 – 3)} is: Solution:		
Q.3:	The simplified form of 20 + {10 – 5 + (7 – 3)} is: Solution:	Q. 3	The value of 1640 – 1325 is: Solution:

Question-17: The solution of the equation $5x - 2 = 3x + 6$ is:

प्र.17	समीकरण $5x - 2 = 3x + 6$ का हल है : हल:	प्र.17	समीकरण $5x - 2 = 3x + 6$ का हल है : हल:
प्र.17	समीकरण $5x - 2 = 3x + 6$ का हल है : हल:	प्र.17	समीकरण सोडवा. $5x - 2 = 3x + 6$. सोडवा:

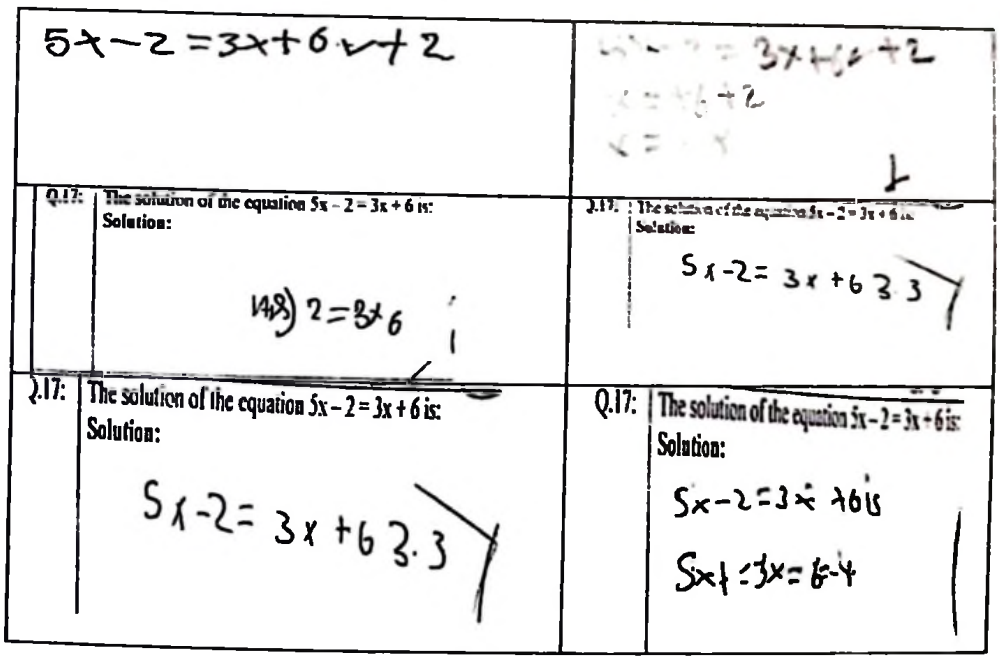
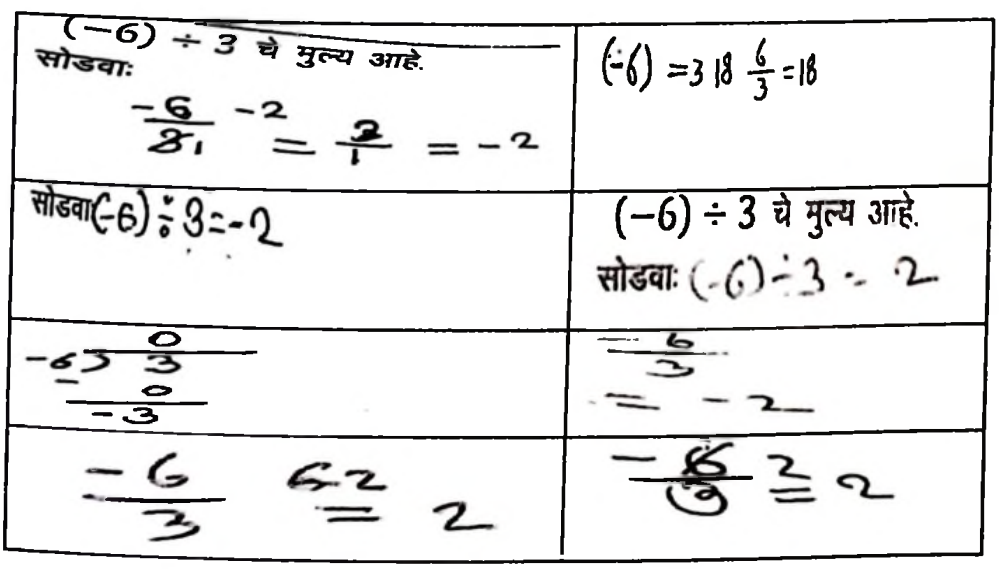


Table No. 4.2.3.2

Process Mistake Committed by Class VII Students of Maharashtra residing in slums during Mathematics Process

Level-1

Question-1: The value of (–6) ÷ 3 is:



Question-3: The value of 2^{-2} is:

$\frac{-2}{-2} - \frac{2}{2} = \frac{3}{2} = -4$	$2^{-2} = +2 \times +2 = 4$
$\frac{2}{2} = -1 = \frac{4}{1}$	$\frac{-2}{-2} = 0 \frac{1}{4}$
$2 - = 6 \quad 2 \frac{-}{2}$	$2 - 2^{-2} = -4$
$2^{-2} = -4$	$(2^{-2}) = -2^{2} = \frac{1}{4}$
$2 = (-2) \times (-2)$ $= 4$	$2 = (-2) \times (-2)$ 4
$2^{-2} = 2^{4}$	$\frac{1}{2} = ^{2} = \frac{1}{4}$
$\frac{1}{2^{2}} = \frac{2}{4}$	$2^{-2} = +2 \times +2 = 4$
$2^{-2} = -4$	$= 2 \times 2 \times 2$ $= 8 \cdot 12.$

Question-3: The value of 2^{-2} is:

$2 \; 2 \; 8 \; 2, 1 \; 2 = 4$	Q.3: The value of 2^{-2} is: Solution: $2^{2} \times 2 = 4 \quad A = -4$ $2 \cdot 2 \; 2 = -4$
The value of 2^{-2} is: Solution: $2^{-2} = 2+2 = 4 \quad -4$	$2 - 2 \Rightarrow 2 + 2 \Rightarrow 4 \quad -4$
Q.3: The value of 2^{-2} is: Solution: $= 2^{2} = 4$ $= 2^{-2} = -4$	$x_2 = 2+2 = 4$ $= 4$
Q.3: The value of 2^{-2} is: Solution: $x_2 = 2+2 = 4$ $= 4$	$= 2^{2} = 4$ $= 2^{-2} = -4$

Q.3:	The value of 2^{-2} is: Solution: $2^2 = 2+2 = 4$ - Answer 4	$= 2^2 = 4$ $22 = 2+2 = 4$ - 4
Q.3:	The value of 2^{-2} is: Solution: $= 2^2 = 4$ $22 = 2+2 = 4$ - 4	

CLASS 7, LEVEL-2

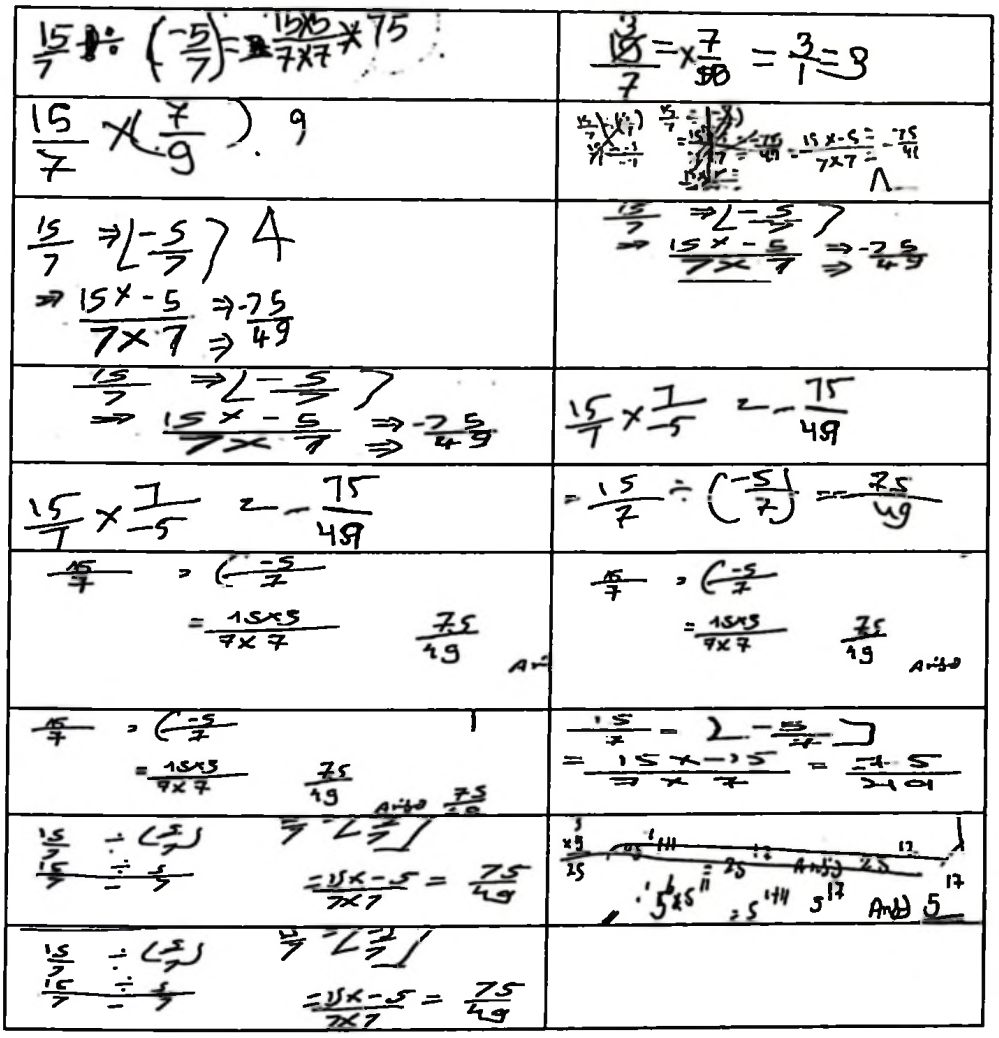
Question-3: Solve $\left(\frac{7}{8}\right)^2 \div \left(\frac{8}{7}\right)^{-2}$:

Solve $\left(\frac{7}{8}\right)^2 \div \left(\frac{8}{7}\right)^{-2}$: $\left[\frac{7}{8}\right]^2 \div \left[\frac{8}{7}\right]^{-2} = \frac{7^2}{8} \div \frac{8^4}{7} = \left[\frac{7}{8}\right]^1$	$\left(\frac{7^2}{8}\right) \div \left(\frac{8}{7}\right)^{-2} = \frac{7^2}{8} \div \frac{8^{-1}}{7} = \left(\frac{7}{8}\right)^1$
$\left(\frac{8}{7}\right)^{-4}$	$\left(\frac{7^2}{8}\right) \div \left(\frac{8}{7}\right)^{-2} \left(\frac{8}{7}\right)^{-4}$
$\left[\frac{7}{8}\right]^2 \div \left[\frac{8}{7}\right]^{-2} = \left[\frac{7}{8}\right]^{2-2} = \frac{7^0}{8}$	$\frac{3}{4} + (-1.4) = \frac{1}{14}$
$\left[\frac{7}{8}\right] \left[\frac{8}{7}\right]$	$\left(\frac{7}{8}\right)^2 \div \left(\frac{8}{7}\right)^{-2} \left(\frac{7}{8}\right)$
$\frac{7^2}{8} \times \frac{8^{-2}}{27}$ $\left(\frac{7}{8}\right)^8$ $\frac{7^2}{8} \times \frac{7}{8} = 7$	$\frac{7^2}{8} \times \frac{8}{7}^{-2}$ $\left(\frac{7}{8}\right)^1$ $\frac{7^2}{8} \times \frac{7}{8}$
$\frac{7^2}{8} \times \frac{8^{-2}}{7}$ $\left(\frac{7}{8}\right)^0$ $\frac{7^2}{8^2} \times \frac{7}{8}^{-2}$	$\frac{7^2}{8} \times \frac{8}{7}^{-2}$ $\left(\frac{7}{8}\right)^6$ $\frac{7^2}{7} \times \frac{7}{8}^{-2}$
$\frac{7^2}{8} \times \frac{8}{7}^{-2}$ $\left(\frac{7}{8}\right)$ $\frac{7^2}{8} \times \frac{7}{8}^{-2}$	$\frac{7^2}{8} \times \frac{8}{7}^{-2}$ $\left(\frac{7}{8}\right)$ $\frac{7^2}{8} \times \frac{7}{8}^{-2}$
$\frac{7^2}{8} \times \frac{8}{7}^{-2}$ $\left(\frac{7}{8}\right)^0$ $\frac{7^2}{8^2} \times \frac{7}{8}^{-2}$	$\frac{7^2}{8} \times \frac{8}{7}^{-2}$ $\left(\frac{7}{8}\right)$ $\frac{7^2}{8} \times \frac{7}{8}^{-2}$
$\frac{7^2}{8} \times \frac{8^{-2}}{7} = \left(\frac{7}{8}\right)$ $= \frac{7}{8^2} \times \frac{7}{8}^{-2}$	$\frac{7}{8} \times \frac{8^2}{7}$ $\left(\frac{7}{8}\right)$ $\frac{7^2}{8} \times \frac{7}{8}^{-2}$

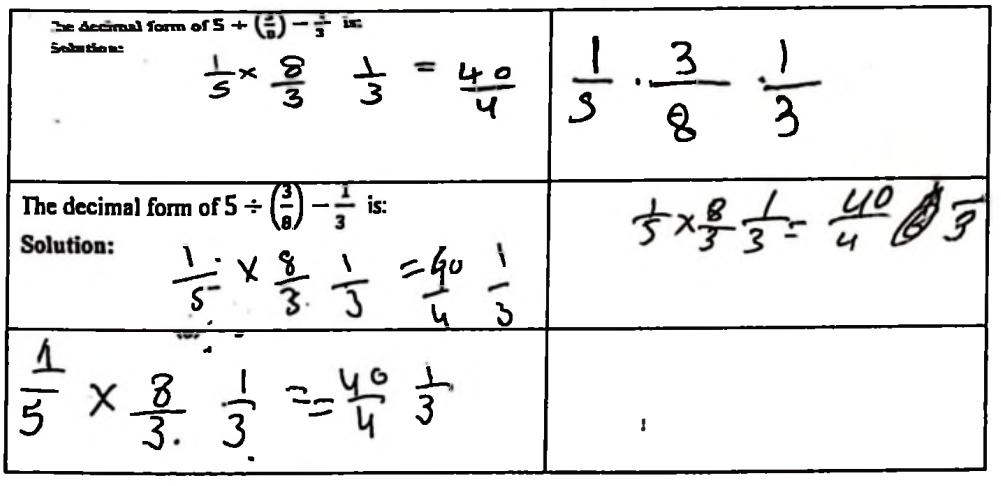
$= \frac{7}{8} \times \frac{8^2}{7} \quad \left(\frac{7}{8}\right)^1$ $= \frac{7^2}{8} \times \frac{7}{8} - 2$	$\frac{7^2}{8} \times \frac{8^{-2}}{7} \quad \left(\frac{7}{8}\right)^1$ $\frac{7^2}{8} \times \frac{7}{8} - 2$
$\frac{7^{-2}}{8} \times \frac{8^{-2}}{1} \quad \left(\frac{7}{8}\right)^2$ $\frac{7^{-2}}{8} \times \frac{7}{8}^{-2}$	

Question-5: Solve $\frac{15}{7} \div \left(\frac{-5}{7}\right)$:

$\frac{15}{7} \div \left(\frac{-5}{7}\right) = \frac{15 \times -5}{7 \times 7} = -\frac{75}{49}$	$\frac{15}{7} \div \frac{-7}{5} = \frac{75}{49}$
$\frac{15}{7} \times \frac{7}{-5}$	$= 3$
$= 3$	$\frac{15}{7} \times \frac{7}{-5} = 3$
$\frac{15}{7} = \times \frac{7}{15} = \frac{1}{1} = 3$	$\frac{35}{7} = \frac{7}{-5} = \frac{7}{-5} = 3$
$\frac{15^3}{7} \times \frac{7}{5} = \frac{3}{1} = 3$	$\frac{3}{18} \times \frac{3}{15} \times \frac{7}{18} = \frac{3}{1} = 3$
$\frac{3}{15} \times \frac{7}{5} = \frac{3}{1} = 3$	$\frac{15}{7} \div \left(\frac{-5}{7}\right) = \frac{15}{7 \times 7} \times 75$
$\frac{3}{15} = \times \frac{7}{90} = \frac{3}{1} = 3$	$\frac{15}{7} \times \left(\frac{7}{9}\right)$ 9
$\frac{15}{7} \div \left(\frac{-5}{7}\right) = \frac{15 \times -5}{7 \times 7} = -\frac{75}{49}$	$\frac{15}{7} \div \frac{-7}{5} = \frac{75}{49}$
$\frac{15}{7} \times \frac{7}{-5}$	$= 3$
$= 3$	$= 3$
$\frac{15}{7} \times \frac{7}{-5} = 3$	$\frac{15}{7} = \times \frac{7}{15} = \frac{1}{1} = 3$
$\frac{35}{7} = \frac{7}{-5} = \frac{7}{-5} = 3$	$\frac{15^3}{7} \times \frac{7}{5} = \frac{3}{1} = 3$
$\frac{3}{18} \times \frac{3}{15} \times \frac{7}{18} = \frac{3}{1} = 3$	$\frac{3}{15} \times \frac{7}{5} = \frac{3}{1} = 3$



Question-7: The decimal form of $5 \div \left(\frac{3}{8}\right) - \frac{1}{3}$ is:



Question-2: Solution of $\frac{2}{3}\times\left[\frac{3}{4}+\left(-\frac{1}{4}\right)\right]$ will be:

Solution of $\frac{2}{3}\times\left[\frac{3}{4}+(-\frac{1}{4})\right]$ will be: Solution:	$\frac{3}{4}, \frac{11}{1}=\frac{4}{4}=\frac{1}{4}=\frac{32}{30}\frac{B}{4}$
	Solution:
Solution:	

Question-11: $5^6\times5^{11}$ are equal to:

$5^6\times5^{11}=5^{6+11}=17$	$5^{6\ 11}\Rightarrow5^{6+11}17$
$25^{6+11}=25^{17}$	$5^6\times5^{11}\Rightarrow5^{6+11}=17$
$5^6\times5^{11}=5^6\times6^1=6\times5^{6\times11}=25$	$5^6\times5^{11}=5^{17}$
$56=>56+11$	$5^6\times5^{11}=5^{6+11}=17$
$5^6\times5^{11}, 5^{11+17}\ 5^{17}$ Ans 5^{17}	$25^{6+11}=25^{17}$

$-4xy$ और $7y^2$ का गुणा है :

$-4xy\times7y^2$ $=4\times7\times x\times y\times y\times y$ $=-28xy^3$	$-4xy\times7y^2=28x^3y$
$\frac{4}{10}=-28x^3y$	$(-4xy\times7y^2=28x^8y$
$\frac{4}{7}\ x\ \frac{y}{y^2}$ $28\ x\ y^3$	$=9\times25$
$-4\times4\times7y^2$ $=-4\times7\times x\times y\times y\times y$ $=-28x\ -28xy^3$	$-4xy\times7y^2=28x^3y$

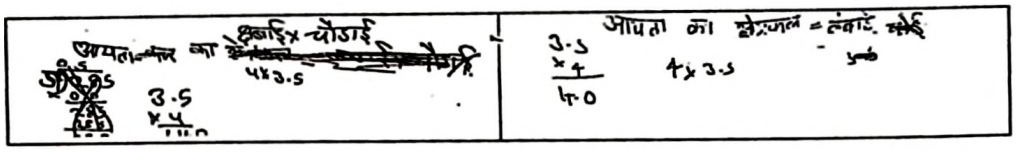
$-4xy \times 7y^2 = 28x^3y$	
$\frac{4}{10} = -28x^3y$	$(-4)4xy \times 7y^2 = 28x^3y$
	$= 9 \times 4 = 5$

Question-14: 0.527 can be written as:

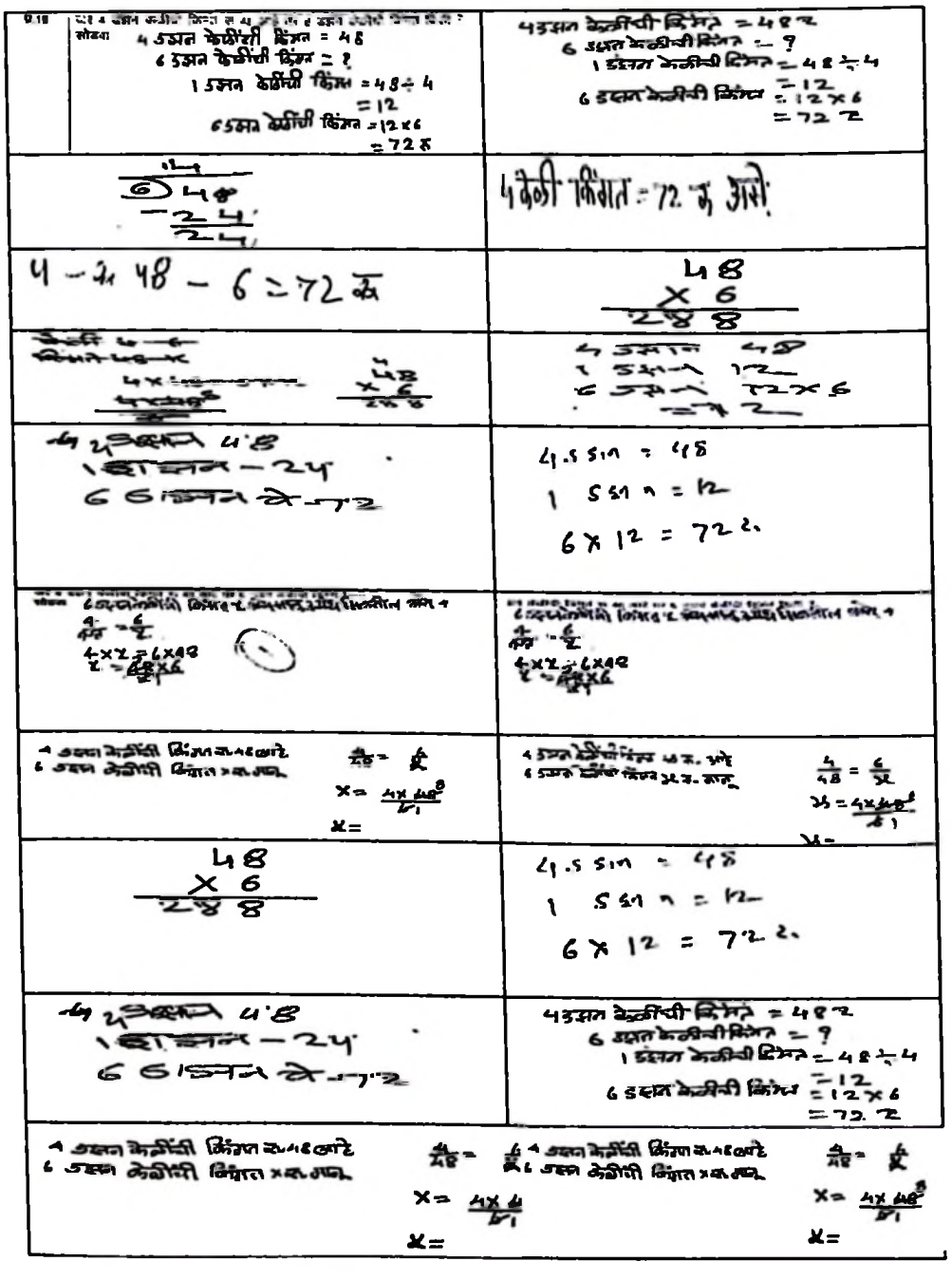
0.527 can be written as: Solution: 0.527. 527. 1000.	0.527 can be written as: Solution: 0-5-27 5 2 2 1000
0.527 can be written as: Solution: 0.627 527 1000	

Question-16: Rahul's bedroom floor is in rectangular shape with length of 4 meters and width of 3.5 meters. What is the area of the floor?

आयता कार का क्षेत्रफल = लंबाई × चौड़ाई 3.5 × 4 = 4 × 3.5 140	आयता कार का क्षेत्रफल = लंबाई × चौड़ाई 3.5 4×3.5 ×4
आयता कार का क्षेत्रफल = लंबाई × चौड़ाई 3.5 × 4 = 4 × 3.5 140	आयताकार का क्षेत्रफल = लंबाई × चौड़ाई 3.5 4×3.5 ×4 14.0
आयताकार का क्षेत्रफल = लंबाई × चौड़ाई 4×3.5 3.5 ×4	आयता का क्षेत्रफल = लंबाई 3.5 ×4 4×3.5 14.0
आयत का क्षेत्रफल = लंबाई × चौड़ाई = 4 × 3.5	आयत का क्षेत्रफल = लंबाई × चौड़ाई 3.5 = 4×3.5 ×4 140
लंबाई × चौड़ाई	लंबाई × चौड़ाई 3.5 ×4 140
लंबाई × चौड़ाई	आयताकार का क्षेत्रफल = लंबाई × चौड़ाई 4×3.5



Question-16: The price of 4 Dozen Bananas is Rs. 48. What will be the price of 6 Dozen Bananas?



4 दर्जन केलों की कीमत 48 रु. है तो 6 दर्जन केलों की कीमत ? रु. होगी $\frac{4}{48} = \frac{6}{x}$ $x = \frac{4 \times 48}{6}$	4 दर्जन केलों की कीमत = 48 रु 6 दर्जन केलों की कीमत = ? 1 दर्जन केलों की कीमत = 48 ÷ 4 = 12 6 दर्जन केलों की कीमत = 12 × 6 = 72 रु
4 दर्जन केलों की कीमत = 48 रु 6 दर्जन केलों की कीमत = ? 1 दर्जन केलों की कीमत = 48 ÷ 4 = 12 6 दर्जन केलों की कीमत = 12 × 6 = 72 रु	4 दर्जन केलों की कीमत = 48 रु 6 दर्जन केलों की कीमत = ? 1 दर्जन केलों की कीमत = 48 ÷ 4 = 12 6 दर्जन केलों की कीमत = 12 × 6 = 72 रु
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 24 रु	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 48 × 6 = 288 6 दर्जन केलों का मूल्य 288 रु है
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 4 48 × 6 = 288	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 4)48(12 12 × 6 = 72 Ans
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 4)48(12 12 × 6 = 72 Ans	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 4 दर्जन केलों का मूल्य = 48 ~~6 दर्जन केलों का मूल्य~~ = 12×6 = 72 रु प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 1 दर्जन केलों का मूल्य = 48 = 12×6 = 72 रु
यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है हल: 4 दर्जन केलों का मूल्य = 48 ~~6 दर्जन केलों का मूल्य~~ = 48 x = 12 × 6 = 72 रु	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है हल: 4 दर्जन केलों का मूल्य = 48 ~~दर्जन केलों का मूल्य~~ = 12 6 = 72 रु
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है हल: 1 दर्जन केलों का मूल्य = 48 = 12 × 6 = 72 रु	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 24 रु
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 48 × 6 = 288 6 दर्जन केलों का मूल्य 288 रु है	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 4 48 × 6 = 288
यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 48 × 6 = 288 तो छः दर्जन केलों का मूल्य 288 है	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 1 दर्जन केले का मूल्य = 48 ÷ 4 = 12 × 6 तो 6 दर्जन केलों का 72 रु है
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: ~~13 दर्जन केले का मूल्य = 48~~ $\frac{4}{48} = \frac{6}{x}$ 4x = 288 $x = \frac{288}{4}$ 48 × 6 = 288	4)48(12 12 × 6 = 72
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 24 रु	प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 4 दर्जन केलों का मूल्य = 48 ~~6 दर्जन केलों का मूल्य~~ = 12×6 = 72 रु
प्र.19 यदि 4 दर्जन केलों का मूल्य रु 48 हो तो 6 दर्जन केलों का मूल्य है : हल: 1 दर्जन केले का मू = 48 ÷ 4 = 12 × 6 = 72 रु तो 6 दर्जन केलों का मू 72 रु है।	1 दर्जन केले का मूल्य = 48 ÷ 4 = 12 × 6 = 72 रु तो 6 दर्जन के का मू 72 रु है

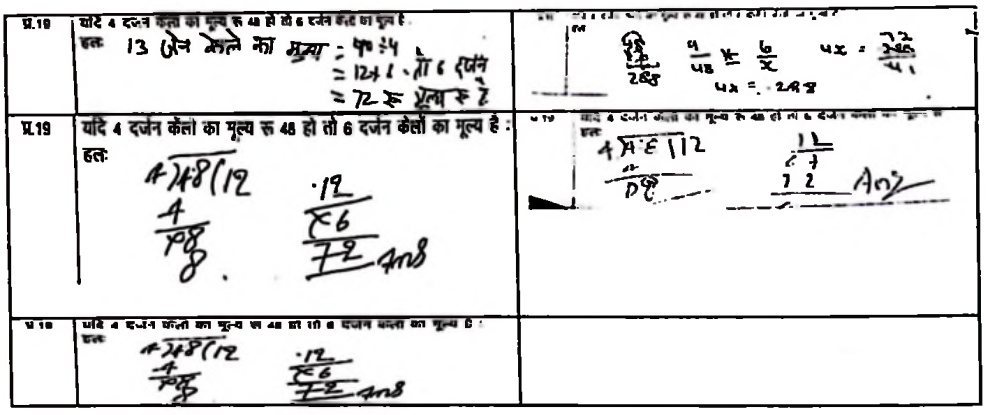
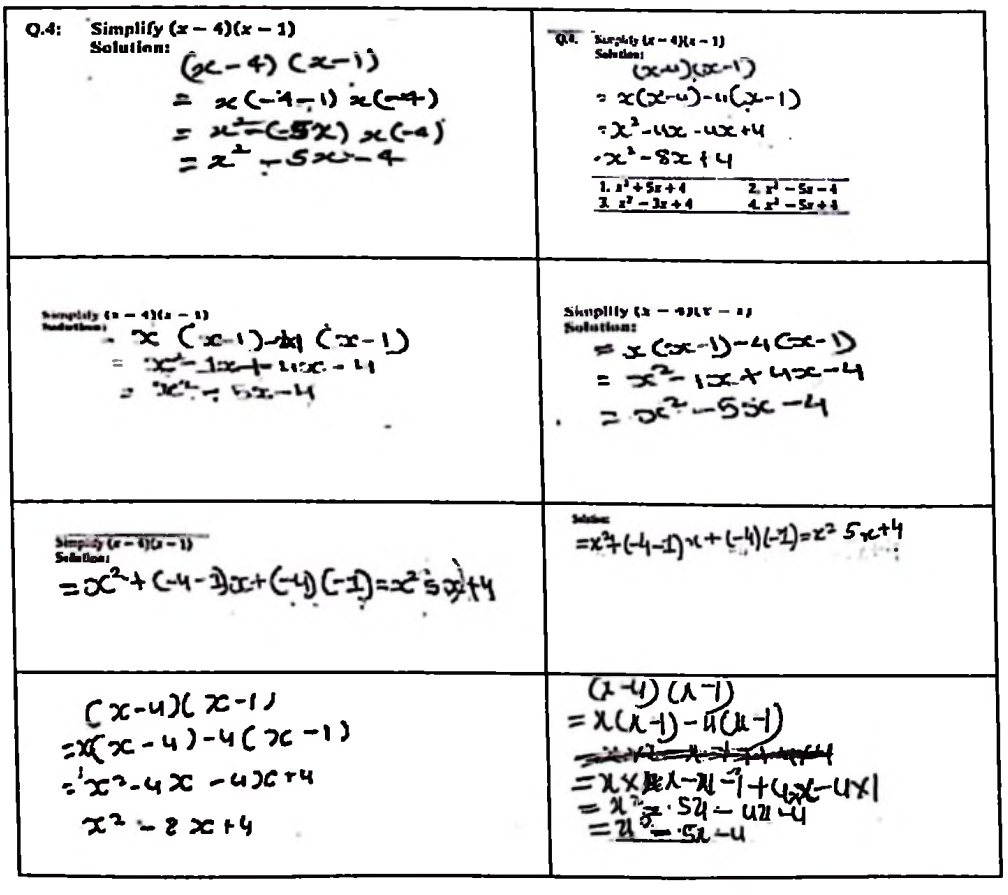


Table No. : 4.2.3.3

Process Mistake Committed by Class VIII Students of Maharashtra residing in slums during Mathematics Process

Level-I

Question-4: Simplify $(x-4)(x-1)$



$(x-4)(x-1)$ $(x)^2-(-4-1)x-1\times4$ $x+(-4)x(1)$	$(x-4)(x-1)$ $(x)+(4)+(3)$
[illegible]	$(x-4)(x-1)$ $=(x)^2-(4-1)x-1\times4$ $=x+(-4)x(1)$
$(x-4)(x-1)$ $(x)^2+(-4)-(3)$	$(x-4)(x-1)=x^2-5+$ $(x)^2+(-5)=+(4)$
$=x(x-1)-4(x-1)$ $=x\times x-4\times x-4\times x-1$ $=x\times x$	$(x-4)(x-1)$ $=x-4+x-1$ $=x^2-5x+4$
$=x(x-1)-4(x-1)$ $=x\times x-4\times x-4\times-1$ $=x\times x$	$=x^2+(-4-1)x+(-4)(-1)$ $=x^2+5x+5x+4$
$(x-4)(x-1)$ को सरल कीजिए। हल: $(x-4)(x-1)(x-1)(x+4)$ $(x^2)(5x+4)$	$(x-4)(x-1)$ को सरल कीजिए। हल $(x-4)(x-1)$ $(x)^2+(4)+(3)$

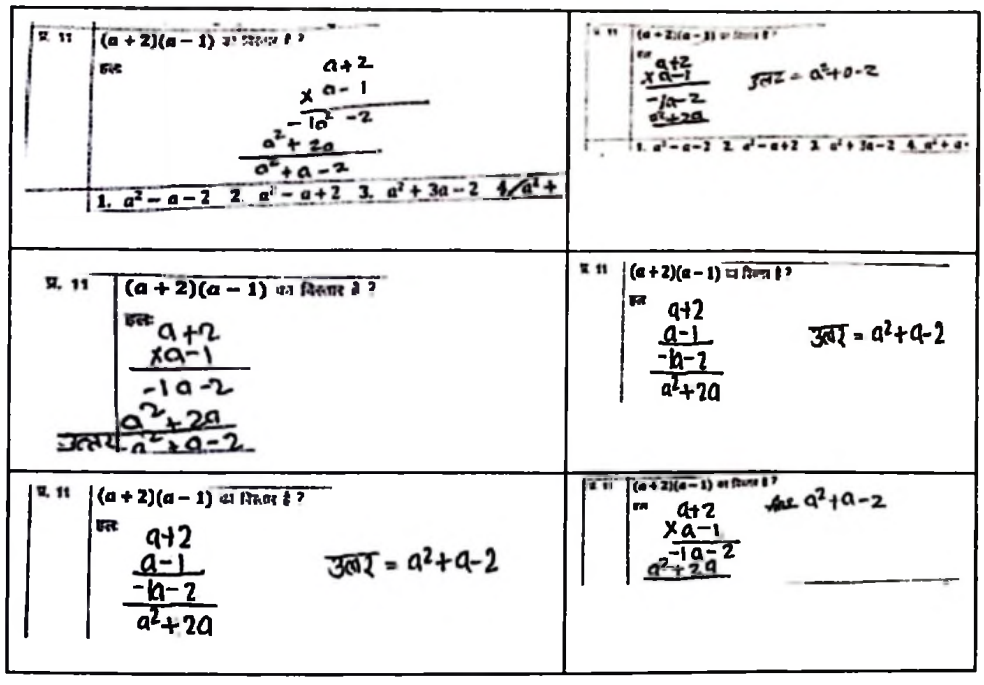
Question-9: Fifth value of 13 is :

fifth value of 13 is = 65	Fifth value of 13 is: Solution: Fifth value of 13 is = 65
$+3$ $=13+5$ $=65$	$13+5$ $=65$
$15\times5=65$	Fifth value of 13 is 65.
fifth value of 13 is = 65	13 $=13\times1$ 13×5 $=65$

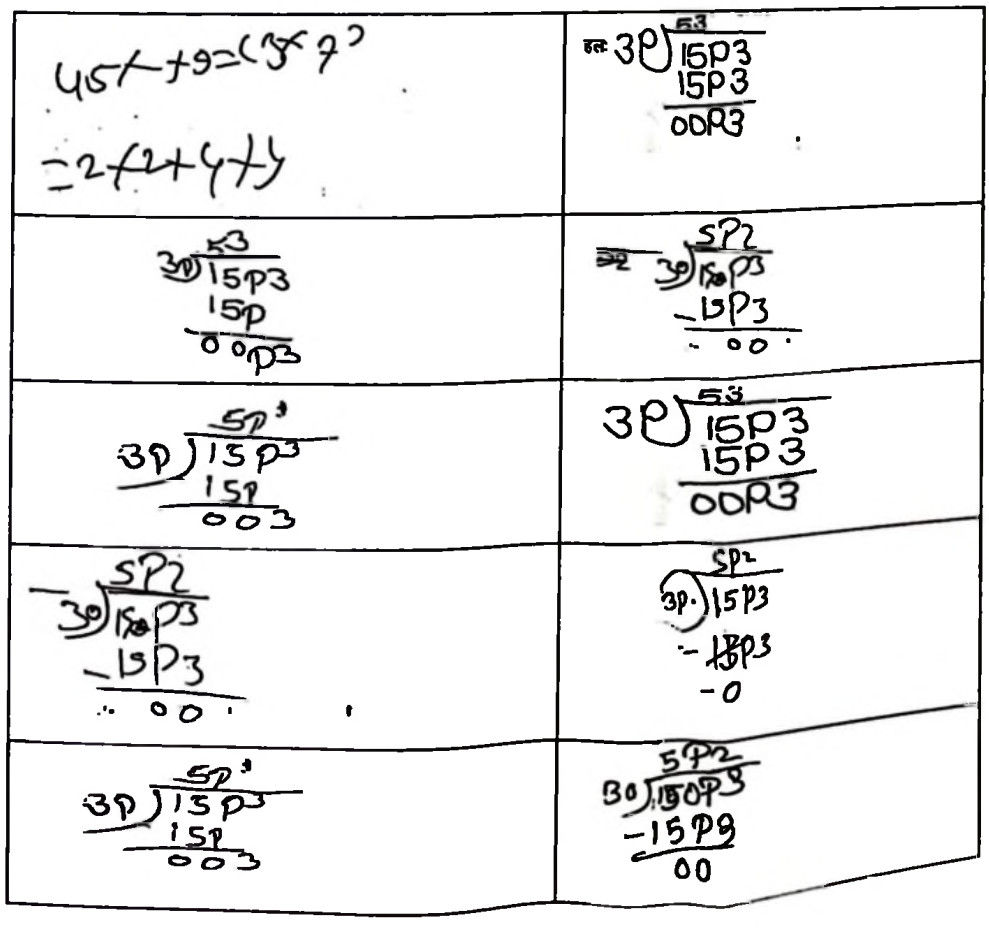
$\frac{13}{65}$	13 का दशमक मूल्य है? हल: 13× (65)

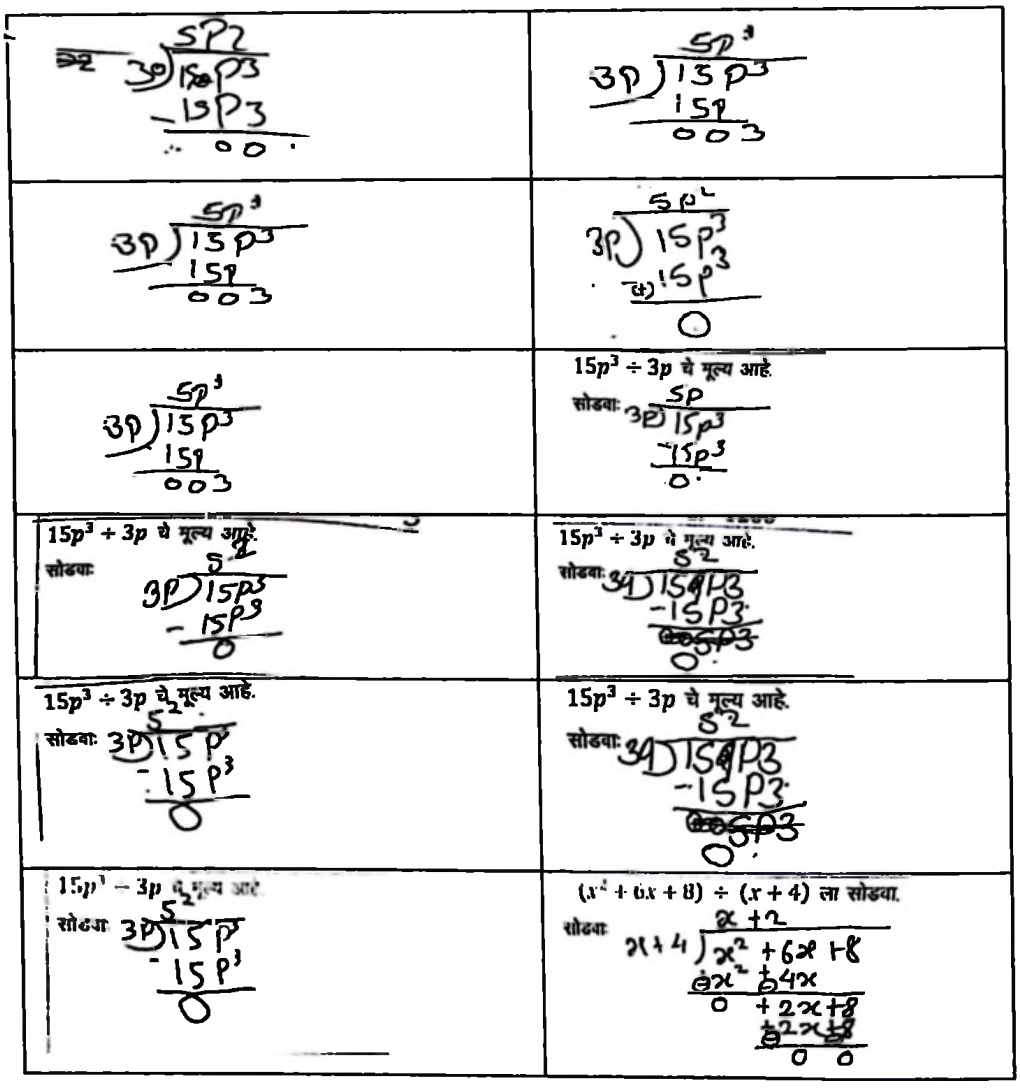
Question-11: Simplify$(a+2)(a-1)$?

Solution: $(a^2-b^2)=(a+b)(a-b)$ $=(a+2)(a-1)$ $=a^2-3a+2$ $=a^2+3a+2$ =	$(a^2-b^2)=(a+b)(a-b)$ $(a+1)\quad a-1)$ $a3+3a-2$
$(a^2-b^2)=(a+b)(a-b)^2$ $(a-+2a)\quad (a-1)$ a^2+3a-2	$(a^2-b^2)=(a+b)(a-b)$ $(a+d)\quad (a-1)$ a^2+3a-2
$(a^2-b^2)=(a+b)(a-b)$ $(a+b)\quad (a-1)$ a^2+3a-2	Simplify$(a+2)(a-1)$? Solution: $=a(a-1)+2(a-1)$ $=a^2-1+2a-2$ $=a^2+3a-2$
$(a+2)(a-1)$ का विस्तार है ? हल $(a+2)(a-1)$ $=a(a+2)+2(a=1)=a\times a-a-2\times a+2$ $=a^2+3a+2$	हल $(a+2)(a-1)$ $=a(a+2)+2(a-1)=a\times a\quad a2\bar{x}\ a+2$
Q. 11 $(a+2)(a-1)$ का विस्तार है ? हल $(a+2)(a-1)$ $=a(a+2)+2(a+1)=a\times a-2\times a+2$ $=a^2+3a-2$	$(a+2)(a-1)$ का विस्तार है ? हल $(a+2)(a-)$ $=a(a+2)+2(a-1)=a\times a-a-2\times a+2$ $=a^2+3a+3a-2$
Q. 11 $(a+2)(a-1)$ का विस्तार है ? हल $(a+2)(a-)$ $=a(a+2)+2(a-1)=a\times a-a-2\times a+2$ $=a^2+3a-2$	$(a+2)(a-1)$ का विस्तार है ? $(a+2)\quad (a-1)$ $=a(a+2)+2(a-1)=a\times a-a-2\times a+2$ $=a^2+3a-2$

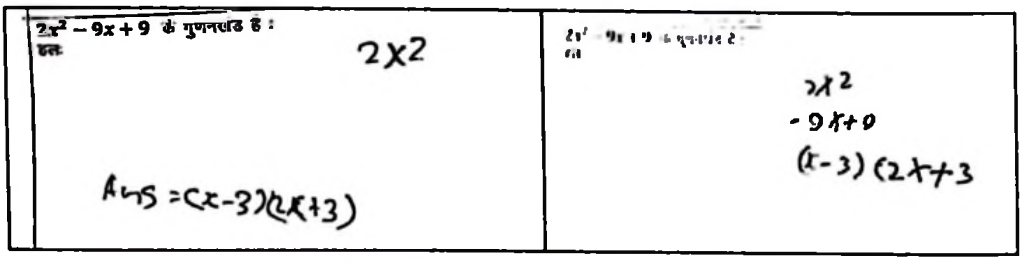


Question 16: The value of $15p^3 \div 3p$ will be:





Question 19: The factors of $2x^2 - 9x + 9$ are:



$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x2 - 9x + 9$	$2x^2 - 9x + 9$ के गुणनखंड है : हल: $= 2x^2 - 6x - 3x + 9 \quad x - 6 -$ $= 2x(x - 3) - 3(x - 3$ $= (x - 3)(2x + 3)$
$2x^2 - 9x + 9$ के गुणनखंड है : हल: $= 2x^2 - 6x - 3x + 9x - 6 - 3$ $= 2x(x - 3) - 3(x - 3)$ $= (x - 3)(2x + 3)$	$2x^2 - 9x + 9$ के गुणनखंड है : हल: $= 2x^2 - 6x - 3x + 9 \quad -6 -3$ $= 2x(x - 3) - 3(x - 3)$ $= (x - 3)(2x + 3)$
$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x - 9x + 9$ $2x^2 - 6x - x + 3$ $2x(x - 6 - 13/3 + 3]$ $(x - 6) \quad (x - 3$	[illegible]
$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x^2 - 9x + 9$ $2x$	$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x^2 - 9x + 9$ $= 2x^2 - 6x - 3x + 9$ $= 2x(x - 3)(2x - 3)$ $(x - 3)(2x - 3)$ $(x - 3)(2x + 3)$
$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x^2 - 9x + 9$ $2x^2 - 6x - 3x + 9$ $2x(x - 3) - 3(x - 3)$ $(x - 3)(2x - 3)$	$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x^2 - 9x + 9$ $= 2x^2 - 6x - 3x + 9$ $= 2x(x - 3) - 3(x - 3)$ $= (x - 3)(2x - 3)$
$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x^2 - 9x + 9$ $2x^2 - 6x + 3x + 9$ $2x(x - 3) - 3(x - 3)$ $(x - 3)(2x - 3)$	$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x^2 - 9x + 9$ $= 2x^2 - 6x - 3x + 9$ $= 2x(x - 3) - 3(x - 3)$ $= (x - 3)(2x - 3)$
$2x^2 - 9x + 9$ के गुणनखंड है : हल: $2x^2 - 9x + 9$ $2x^2 - 6x + 3x + 9$ $2x(x - 3) - 3(x - 3)$ $(x - 3)(2x - 3)$	$2x^2 - 9x + 9$ के गुणनखंड है : हल: $= 2x^2 - 9x + 9$ $2x^2 - 6x + 3x$ $2x(x - 3)(2$ $(x - 3)(2x$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$2x^2 - 9x + 9$

$2x^2 - 6x - 3x + 9$

$2x(x-3) - 3(x-3)$

$(x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$2x^2 - 6x - 3x + 9$

$2x(x-3) - 3(x-3)$

$(x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$= 2x^2 - 9x + 9$

$2x^2 - 6x - 3x + 9$

$2x(x-3) - 3(x-3)$

$(x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$2x^2 - 6x - 3x + 9$

$2x(x-3) - 3(x-3)$

$(x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$= 2x^2 - 6x - 3x + 9$

$= 2x(x-3) - 3(x-3)$

$= (x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$2x^2 - 5x + 4x + 9$

$2x(x+5) - (x+4) + 9$

$(x+5)(x+4)$

$= 2x^2 - 9x + 9$

$2x^2 - 6x - 3x + 9$

$2x(x-3) - (x-3)$

$(x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$2x^2 - 9x + 9$

$= 2x^2 - 6x - 3x + 9$

$= 2x(x-3) - 3(x-3)$

$= (x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$2x^2 - 9x + 9$

$2x^2 - 6x - 3x + 9$

$2x(x-3) - 3(x-3)$

$(x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

$= 2x^2 - 9x + 9$

$= 2x^2 - 6x - 3x + 9$

$= 2x(x-3) + x(x-3)$

$= (x-3)(2x-3)$

$2x^2 - 9x + 9$ के गुणनखंड है :

हल:

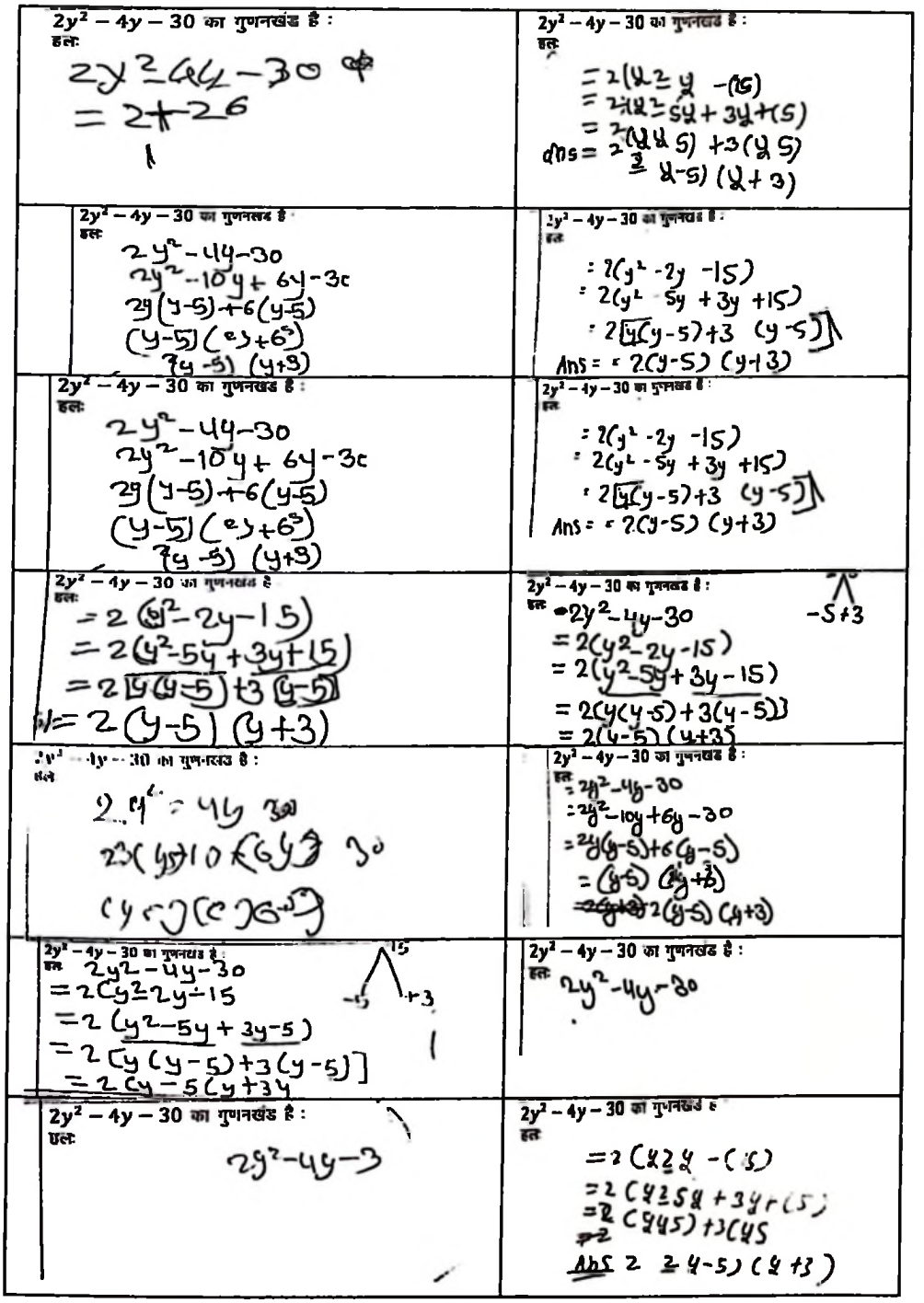
$2x^2 - 9x + 9$

$= 2x^2 - 6x - 3x + 9$

$= 2x(x-3) - 3(x-3)$

$= (x-3)(2x-3)$

Question 2: What are Factors of $2y^2 - 4y - 30$



2y² – 4y – 30 का गुणनखंड है : हल: 2y² – 2y – 30 = 2y² – 10y + 6y – 30 = 2y(y – 5) + 6(y – 5) = (y – 5)(2y + 6) = 2(y – 5)(y + 3)	$2y^2 - 4y - 30$ का गुणनखंड है : हल: 2y – 2y × 30 = 2y² – 10y 6y + 20 = 2y = 2y + (y – 5) + 6(y – 5) = (y – 5)(7y + 6) = 2(y – 3)((
$2y^2 - 4y - 30$ का गुणनखंड है : हल: 2y² – 4y – 30(y – 5)(y – 3) (2y² – 10y + 10y × y + 10 y + 5	2y² – 4y – 30 का गुणनखंड है : हल: 2y² – 4y – 30 ; (y – 5)(y – 3) b
$2y^2 - 4y - 30$ का गुणनखंड है : हल: (y – 5)(y + 3) 2y² 4y – 30(y – 5)(y – 3) 2y – 10y + 10y × y + 10	

Question-5: Solve $(16)^{1/4} \times (81)^{1/4}$ is:

Solution: $= 16^{\frac{1}{4}} \times 81^{\frac{1}{4}}$ $= 4^{\frac{1}{4}} \times 9^{\frac{1}{2}}$ = 36	16 1/4 × 81 1/4 = 1296
16 81 16 128× 1296	16 1/4 × 81 1/4 = 1296
$16)^{\frac{1}{4}} \times (81)^{\frac{1}{4}}$ = 2 × 3 = 6	$(16)^{\frac{1}{4}} \times (81)^{\frac{1}{4}}$ = 2 × 3 = 6
$(16)^{\frac{1}{4}} \times (181)^{\frac{1}{4}}$ = 1296	(16)^1/4 × (81)^1/4 का हल है। = 1296
16/4 × 81/4 1296	

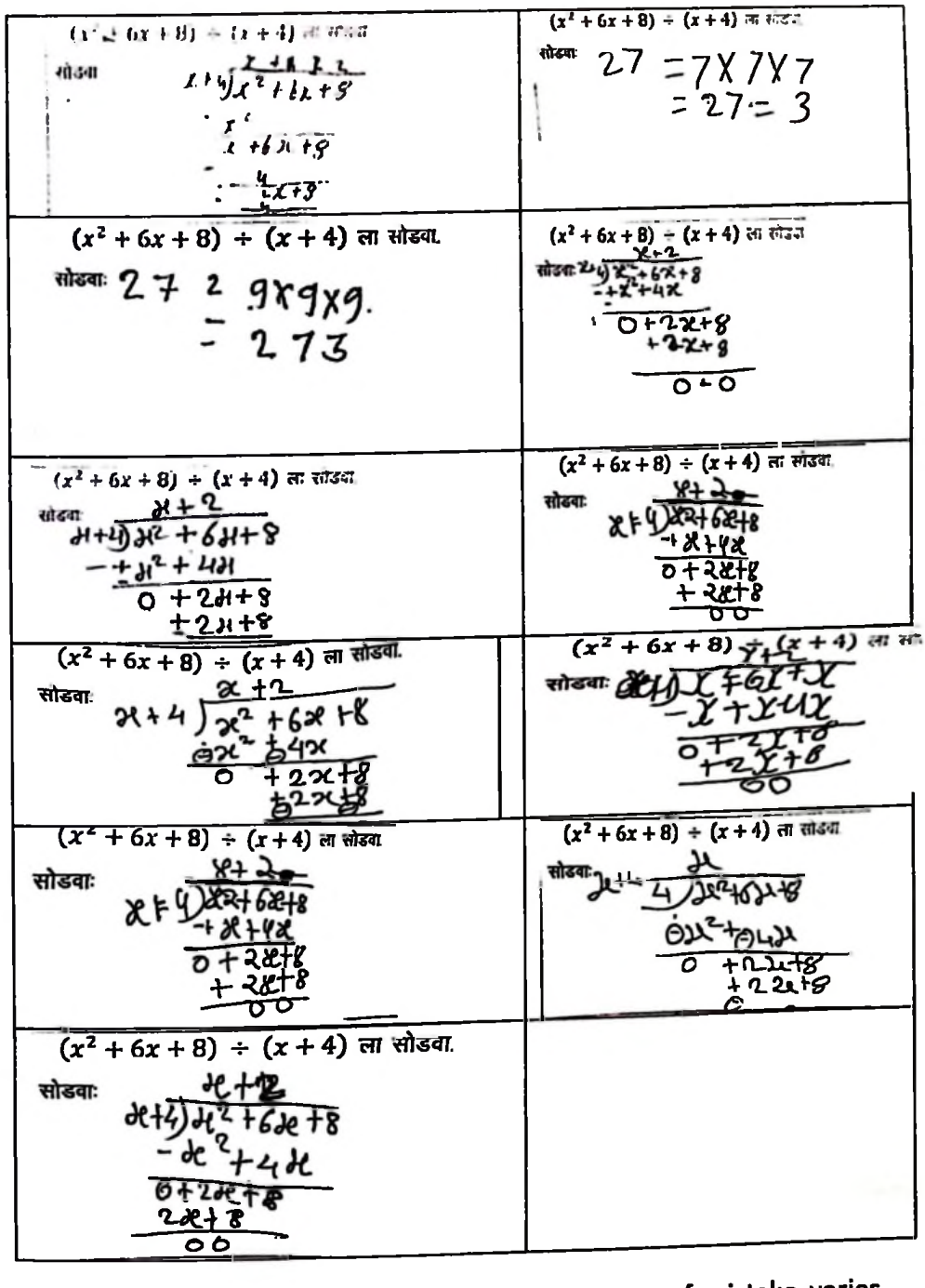
Question-7: $\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ **equals to:**

Solution: $\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2} = \frac{175x}{2386x} \times \frac{6x}{x+2}$	[illegible] 4
[illegible]	[illegible]
$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ बराबर है : हल: $\frac{7x^2+18x+8}{49x^2-16} \times 14x-8=8$	$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ $=\frac{(7x+4)(x+2)}{(7x+4)(7x-4)} \times \frac{2(7x-4)}{(x+2)}$
$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ $=\frac{(7x+4)(x+2)}{(7x+4)(7x-4)} \times \frac{2(7x-4)}{(x+2)}$ $=2$	$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ $=\frac{(7x+4)(x+2)}{(7x+4)(7x-4)} \times \frac{2(7x-4)}{(x+2)}$ $=2$
$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{2x+2}$ $=\frac{(7x+4)(x+2)}{(7x+4)(7x-4)} \times \frac{2(7x-4)}{(x+2)}$ $=2$	$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ $=\frac{(7x+4)(x+2)}{(7x+4)(7x-4)} \times \frac{2(7x-4)}{(x+2)}$ $=2$
	[illegible]
$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ **equals to:** **Solution:** $\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2} = \frac{175x}{2385x} \times \frac{6}{x+}$	$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2} = 8$
$x+4 \overline{)x^2+6x+8}$ $-x+4$ $2x+8$ $-2x-8$ 0 भागफल $x+4$ शेषफल 0	$x+4 \overline{)x^2+6x+8}$ -8

(x+4) x²+16x+8 x+4 =2x+8 −2x−1 0	x−2 x+4) x²+6x+8 −x²+4x 0 2x+8 2x+8 0 0 भागफल = x−2 शेषफल = 0 3 x(x+4) x²+4x 2(x+4) 2x+8
x x+4) x²+6x+8 x+ 0+	x+2 (x+4) x²+6x+8 x+4 0+8
x+2 (x+4) x²+6x+8 x+4 0+8	x+2 (x+4) x²+6x+8 x+4 0+8
x+4) x²+6x+8 −x²+4x 2x+8 −2x+8 0	3x44) x+6x
x+4) x²+6x+8 −x+4 0+2x+8 −2x−18 0 भागफल − x+4 शेषफल − 0	x+4) x²+6x+8 (x+2 x²+4x +2x+8 −2x− 0+2
x+4) x²+6x+8 −x+4 0+2x+8 −2x−18 0 भागफल − x+4 शेषफल − 0	x+4) x²+6x+8 (x+2 x²+4x +2x+8 −2x− 0+2
3x4) x²+6x+8 x =	x+2 x+4) x²+6x+8 x²+4x 0+2x+8 2x+8 0 0

$x+2$ $x+4 \overline{)x^2+6x+8}$ x^2+4x $0+2x+8$ $2x+8$ $0\ 0$	$(x+4)x^2+16x+8$ x^2+4x $=2x+8$ $-2x-1$ 0
$x+4 \overline{)x^2+6x+8}$ $x=+4x$ $-2x+8$ $-2x-1$ 0	$x+4 \overline{)x^2+6x+8}$ $x=+4x$ $-2x+8$ $-2x-1$ 0
$x+4 \overline{)x^2+6x+8}$ $-x+4$ $0+2x+8$ $-2x-18$ 0	$x+4$ $x+4 \overline{)x^2+6x+8}$ $-x+4$ $0+2x+8$ $-2x+8$ 0
$x+4$ $x+4 \overline{)x^2+6x+8}$ $-x+4$ $0+2x+8$ $-2x+8$ 0	$x+4$ $x+4 \overline{)x^2+6x+8}$ $x+4$ $0+2x+8$ $2+8$ 10
$x+4 \overline{)x^2+6x+8}(x+2$ $=x^2+4x$ $0+2x+8$ $-2x+4$ $0\ 4$	$x+4$ $-x+4$ $0+2x+4$ 0
$x+4 \overline{)x^2+6x+8}(x+2$ $-x^2+4x$ $0+2x+8$ $-2x+4$ $0+4$	$x+4 \overline{)x^2+6x+8}(x+2$ $-x^2+4x$ $0+2x+8$ $-2x+4$ $0+4$

$(x+4)\overline{)x^2+6x+8}\ (x-2$ x^2+4x $0\quad 2x+8$ $2x-8x$	$x+4)x^2+6x+8$ $-x+4$ $0+2x+8$ $-2x-8$ 0 भागाकार $-x+4$ शेषफल -0
$(x+4)\overline{)x^2+6x+8}\ (x-2$ x^2+4x $0\quad 2x+8$ $2x-8x$	$x+4)x^2+6x+8$ $x+4x$ $-2x+8$ $-2x-1$ 0
$x+4)\overline{x^2+6x+8}\ (x+2$ $-x^2$ $+2x+8$ $-2x$ $0+4$	$x+4)x^2+6x+8\ (x+2$ $-x^2$ $+2x+8$ $-2x$ $0+4$
$x+4)\overline{x^2+6x+8}\ (x+2$ $-x^2$ $+2x+8$ $-2x$ $0+4$	$x+4)x^2+6x+8\ (x+2$ $=x^2+4x$ $0+2x+8$ $-2x+4$ $0\ 4$
$x+4)x^2+6x+8\ (x+2$ $=x^2+4x$ $0+2x+8$ $-2x+4$ $0\ 4$	$(x^2+6x+8) \div (x+4)$ चे उत्तर आहे – सोडवा: $(x^2+6x+8) \div (x+4)$ $=x^2+2$
$(x^2+6x+8) \div (x+4)$ चे उत्तर आहे – सोडवा: $(x^2+6x+8) \div (x+4)$ $=x^2+2$	$(x^2+6x+8) \div (x+4)$ ला सोडवा. सोडवा: $x+4)x^2+6x+8\ (x+2$ $-x^2+4x$ $0+2x+8$ $-0+2x+8$ $0\quad 0$



From the above examples it can be seen that type of mistake varies from question to question and also from students to students. Such mistakes if we classify in different categories based on process reflect that these can be marginalized.

Objective 4.02.04: TO STUDY THE DISTRACTER-WISE ANALYSIS OF RESPONSES GIVEN BY STUDENTS DURING MATHEMATICS PROCESS.

In the multiple type question distracter play an important role in identifying the error during the learning process. In the present study multiple choice type question were used, which provided researcher in ample scope for diagnosing the type of errors committed by students during the process of learning. In the following pages analysis of such errors committed by students during mathematics learning is presented. Efforts are also made to critically analyze the errors on the basis of frequency of students committed these errors. Class, level and question wise error committed by students in learning of mathematics distracter analysis of each question is given below-

Table No. : 4.2.4.1

Distracter Analysis of Class VI Students of Maharashtra residing in slums during Mathematics Process

Question No.	Correct Option	Frequency/ Percentage	Option 1	Option 2	Option 3	Option 4	No Response	Double Response	Total
Level-1 1	2	Frequency	100	59	68	16	74	3	320
		Percentage	31.3%	18.4%	21.3%	5.0%	23.1%	0.9%	100.0%
Level-1 2	3	Frequency	13	9	238	17	43	0	320
		Percentage	4.1%	2.8%	74.4%	5.3%	13.4%	0.0%	100.0%
Level-1 3	2	Frequency	9	210	70	3	26	2	320
		Percentage	2.8%	65.6%	21.9%	0.9%	8.1%	0.6%	100.0%

Level-14	4	Frequency	25	33	40	130	90	2	320
		Percentage	7.8%	10.3%	12.5%	40.6%	28.1%	0.6%	100.0%
Level-15	3	Frequency	11	29	159	25	94	2	320
		Percentage	3.4%	9.1%	49.7%	7.8%	29.4%	0.6%	100.0%
Level-16	4	Frequency	42	42	75	88	70	3	320
		Percentage	13.1%	13.1%	23.4%	27.5%	21.9%	0.9%	100.0%
Level-17	4	Frequency	66	42	32	138	36	6	320
		Percentage	20.6%	13.1%	10.0%	43.1%	11.3%	1.9%	100.0%
Level-18	3	Frequency	10	67	126	46	68	3	320
		Percentage	3.1%	20.9%	39.4%	14.4%	21.3%	0.9%	100.0%
Level-19	2	Frequency	70	188	9	9	42	2	320
		Percentage	21.9%	58.8%	2.8%	2.8%	13.1%	0.6%	100.0%
Level-110	1	Frequency	78	28	93	21	97	3	320
		Percentage	24.4%	8.8%	29.1%	6.6%	30.3%	0.9%	100.0%
Level-111	2	Frequency	76	155	6	13	70	0	320
		Percentage	23.8%	48.4%	1.9%	4.1%	21.9%	0.0%	100.0%
Level-112	1	Frequency	155	79	16	9	60	1	320
		Percentage	48.4%	24.7%	5.0%	2.8%	18.8%	0.3%	100.0%
Level-113	4	Frequency	27	12	57	130	92	2	320
		Percentage	8.4%	3.8%	17.8%	40.6%	28.8%	0.6%	100.0%
Level-114	3	Frequency	58	50	71	47	93	1	320
		Percentage	18.1%	15.6%	22.2%	14.7%	29.1%	0.3%	100.0%
Level-115	4	Frequency	10	21	84	79	124	2	320
		Percentage	3.1%	6.6%	26.3%	24.7%	38.8%	0.6%	100.0%
Level-116	1	Frequency	71	53	12	42	142	0	320
		Percentage	22.2%	16.6%	3.8%	13.1%	44.4%	0.0%	100.0%

Level-1 17	2	Frequency	8	129	51	72	57	3	320
		Percentage	2.5%	40.3%	15.9%	22.5%	17.8%	0.9%	100.0%
Level-1 18	1	Frequency	64	35	8	114	96	3	320
		Percentage	20.0%	10.9%	2.5%	35.6%	30.0%	0.9%	100.0%
Level-1 19	1	Frequency	115	40	25	26	112	2	320
		Percentage	35.9%	12.5%	7.8%	8.1%	35.0%	0.6%	100.0%
Level-1 20	2	Frequency	74	121	21	16	87	1	320
		Percentage	23.1%	37.8%	6.6%	5.0%	27.2%	0.3%	100.0%
Level-2 1	3	Frequency	18	23	226	14	36	3	320
		Percentage	5.6%	7.2%	70.6%	4.4%	11.3%	0.9%	100.0%
Level-2 2	4	Frequency	32	23	48	142	66	9	320
		Percentage	10.0%	7.2%	15.0%	44.4%	20.6%	2.8%	100.0%
Level-2 3	1	Frequency	148	48	33	19	70	2	320
		Percentage	46.3%	15.0%	10.3%	5.9%	21.9%	0.6%	100.0%
Level-2 4	3	Frequency	26	22	128	50	94	0	320
		Percentage	8.1%	6.9%	40.0%	15.6%	29.4%	0.0%	100.0%
Level-2 5	4	Frequency	72	26	22	118	81	1	320
		Percentage	22.5%	8.1%	6.9%	36.9%	25.3%	0.3%	100.0%
Level-2 6	2	Frequency	33	161	21	20	81	4	320
		Percentage	10.3%	50.3%	6.6%	6.3%	25.3%	1.3%	100.0%
Level-2 7	1	Frequency	153	38	28	21	78	2	320
		Percentage	47.8%	11.9%	8.8%	6.6%	24.4%	0.6%	100.0%
Level-2 8	2	Frequency	56	157	20	33	49	5	320
		Percentage	17.5%	49.1%	6.3%	10.3%	15.3%	1.6%	100.0%
Level-2 9	4	Frequency	21	13	56	139	89	2	320
		Percentage	6.6%	4.1%	17.5%	43.4%	27.8%	0.6%	100.0%

Level-2 10	3	Frequency	36	32	118	28	106	0	320
		Percentage	11.3%	10.0%	36.9%	8.8%	33.1%	0.0%	100.0%
Level-2 11	3	Frequency	67	52	117	19	63	2	320
		Percentage	20.9%	16.3%	36.6%	5.9%	19.7%	0.6%	100.0%
Level-2 12	2	Frequency	111	141	18	8	42	0	320
		Percentage	34.7%	44.1%	5.6%	2.5%	13.1%	0.0%	100.0%
Level-2 13	2	Frequency	29	111	42	52	83	3	320
		Percentage	9.1%	34.7%	13.1%	16.3%	25.9%	0.9%	100.0%
Level-2 14	4	Frequency	25	48	38	90	118	1	320
		Percentage	7.8%	15.0%	11.9%	28.1%	36.9%	0.3%	100.0%
Level-2 15	2	Frequency	43	96	30	22	129	0	320
		Percentage	13.4%	30.0%	9.4%	6.9%	40.3%	0.0%	100.0%
Level-2 16	1	Frequency	121	55	26	28	87	3	320
		Percentage	37.8%	17.2%	8.1%	8.8%	27.2%	0.9%	100.0%
Level-2 17	2	Frequency	6	91	60	29	133	1	320
		Percentage	1.9%	28.4%	18.8%	9.1%	41.6%	0.3%	100.0%
Level-2 18	3	Frequency	5	66	142	26	79	2	320
		Percentage	1.6%	20.6%	44.4%	8.1%	24.7%	0.6%	100.0%
Level-2 19	4	Frequency	27	83	29	83	95	3	320
		Percentage	8.4%	25.9%	9.1%	25.9%	29.7%	0.9%	100.0%
Level-2 20	1	Frequency	106	21	38	44	90	21	320
		Percentage	33.1%	6.6%	11.9%	13.8%	28.1%	6.6%	100.0%

Table No. : 4.2.4.2

Distracter Analysis of Class VII Students of Maharashtra residing in slums during Mathematics Process

Question No.	Correct Option	Frequency/ Percentage	Option 1	Option 2	Option 3	Option 4	No Response	Double Response	Total
Level-1	3	Frequency	9	38	258	40	26	2	373
1		Percentage	2.4%	10.2%	69.2%	10.7%	7.0%	0.5%	100.0%
Level-1	3	Frequency	52	14	211	25	69	2	373
2		Percentage	13.9%	3.8%	56.6%	6.7%	18.5%	0.5%	100.0%
Level-1	1	Frequency	67	48	111	69	77	1	373
3		Percentage	18.0%	12.9%	29.8%	18.5%	20.6%	0.3%	100.0%
Level-1	2	Frequency	159	133	10	7	58	6	373
4		Percentage	42.6%	35.7%	2.7%	1.9%	15.5%	1.6%	100.0%
Level-1	3	Frequency	102	53	99	25	93	1	373
5		Percentage	27.3%	14.2%	26.5%	6.7%	24.9%	0.3%	100.0%
Level-1	4	Frequency	30	17	60	138	128	0	373
6		Percentage	8.0%	4.6%	16.1%	37.0%	34.3%	0.0%	100.0%
Level-1	1	Frequency	71	43	28	17	213	1	373
7		Percentage	19.0%	11.5%	7.5%	4.6%	57.1%	0.3%	100.0%
Level-1	1	Frequency	168	29	63	5	105	3	373
8		Percentage	45.0%	7.8%	16.9%	1.3%	28.2%	0.8%	100.0%
Level-1	4	Frequency	31	40	42	117	141	2	373
9		Percentage	8.3%	10.7%	11.3%	31.4%	37.8%	0.5%	100.0%
Level-1	2	Frequency	63	21	20	4	69	2	373

10		Percentage	16.9%	57.6%	5.4%	1.1%	18.5%	0.5%	100.0%
Level-1 11	2	Frequency	84	109	17	74	85	4	373
		Percentage	22.5%	29.2%	4.6%	19.8%	22.8%	1.1%	100.0%
Level-1 12	2	Frequency	25	212	14	20	102	0	373
		Percentage	6.7%	56.8%	3.8%	5.4%	27.3%	0.0%	100.0%
Level-1 13	3	Frequency	7	18	274	14	59	1	373
		Percentage	1.9%	4.8%	73.5%	3.8%	15.8%	0.3%	100.0%
Level-1 14	4	Frequency	25	27	53	142	126	0	373
		Percentage	6.7%	7.2%	14.2%	38.1%	33.8%	0.0%	100.0%
Level-1 15	4	Frequency	11	35	47	106	174	0	373
		Percentage	2.9%	9.4%	12.6%	28.4%	46.6%	0.0%	100.0%
Level-1 16	3	Frequency	37	21	145	13	152	5	373
		Percentage	9.9%	5.6%	38.9%	3.5%	40.8%	1.3%	100.0%
Level-1 17	1	Frequency	272	2	0	8	91	0	373
		Percentage	72.9%	0.5%	0.0%	2.1%	24.4%	0.0%	100.0%
Level-1 18	1	Frequency	254	5	3	32	78	1	373
		Percentage	68.1%	1.3%	0.8%	8.6%	20.9%	0.3%	100.0%
Level-1 19	2	Frequency	16	190	63	11	92	1	373
		Percentage	4.3%	50.9%	16.9%	2.9%	24.7%	0.3%	100.0%
Level-1 20	4	Frequency	50	33	50	46	194	0	373
		Percentage	13.4%	8.8%	13.4%	12.3%	52.0%	0.0%	100.0%
Level-2 1	1	Frequency	25	21	128	128	62	9	373
		Percentage	6.7%	5.6%	34.3%	34.3%	16.6%	2.4%	100.0%
Level-2 2	3	Frequency	37	34	86	92	122	2	373
		Percentage	9.9%	9.1%	23.1%	24.7%	32.7%	0.5%	100.0%
Level-2	4	Frequency	21	106	100	41	104	1	373

3		Percentage	5.6%	28.4%	26.8%	11.0%	27.9%	0.3%	100.0%
Level-2	3	Frequency	17	16	228	22	80	10	373
4		Percentage	4.6%	4.3%	61.1%	5.9%	21.4%	2.7%	100.0%
Level-2	2	Frequency	17	156	48	27	125	0	373
5		Percentage	4.6%	41.8%	12.9%	7.2%	33.5%	0.0%	100.0%
Level-2	1	Frequency	182	17	39	29	93	13	373
6		Percentage	48.8%	4.6%	10.5%	7.8%	24.9%	3.5%	100.0%
Level-2	1	Frequency	134	79	34	6	118	2	373
7		Percentage	35.9%	21.2%	9.1%	1.6%	31.6%	0.5%	100.0%
Level-2	4	Frequency	69	36	93	58	115	2	373
8		Percentage	18.5%	9.7%	24.9%	15.5%	30.8%	0.5%	100.0%
Level-2	1	Frequency	163	16	26	60	105	3	373
9		Percentage	43.7%	4.3%	7.0%	16.1%	28.2%	0.8%	100.0%
Level-2	1	Frequency	119	41	27	40	146	0	373
10		Percentage	31.9%	11.0%	7.2%	10.7%	39.1%	0.0%	100.0%
Level-2	1	Frequency	65	28	78	37	165	0	373
11		Percentage	17.4%	7.5%	20.9%	9.9%	44.2%	0.0%	100.0%
Level-2	1	Frequency	52	47	74	25	175	0	373
12		Percentage	13.9%	12.6%	19.8%	6.7%	46.9%	0.0%	100.0%
Level-2	4	Frequency	16	22	80	75	176	4	373
13		Percentage	4.3%	5.9%	21.4%	20.1%	47.2%	1.1%	100.0%
Level-2	3	Frequency	101	38	61	59	113	1	373
14		Percentage	27.1%	10.2%	16.4%	15.8%	30.3%	0.3%	100.0%
Level-2	1	Frequency	165	12	38	28	129	1	373
15		Percentage	44.2%	3.2%	10.2%	7.5%	34.6%	0.3%	100.0%
Level-2	1	Frequency	156	24	14	14	161	4	373

16		Percentage	41.8%	6.4%	3.8%	3.8%	43.2%	1.1%	100.0%
Level-2 17	4	Frequency	32	19	55	118	145	4	373
		Percentage	8.6%	5.1%	14.7%	31.6%	38.9%	1.1%	100.0%
Level-2 18	2	Frequency	26	68	108	23	147	1	373
		Percentage	7.0%	18.2%	29.0%	6.2%	39.4%	0.3%	100.0%
Level-2 19	3	Frequency	13	32	212	6	109	1	373
		Percentage	3.5%	8.6%	56.8%	1.6%	29.2%	0.3%	100.0%
Level-2 20	1	Frequency	148	37	17	6	162	3	373
		Percentage	39.7%	9.9%	4.6%	1.6%	43.4%	0.8%	100.0%

Table No. : 4.2.4.3

Distracter Analysis of Class VIII Students of Maharashtra residing in slums during Mathematics Process

Question No.	Correct Option	Frequency/ Percentage	Option 1	Option 2	Option 3	Option 4	No Response	Double Response	Total
Level-1 1	2	Frequency	106	195	27	1	16	3	348
		Percentage	30.5%	56.0%	7.8%	0.3%	4.6%	0.9%	100.0%
Level-1 2	1	Frequency	201	27	34	56	27	3	348
		Percentage	57.8%	7.8%	9.8%	16.1%	7.8%	0.9%	100.0%
Level-1 3	3	Frequency	100	8	161	7	72	0	348
		Percentage	28.7%	2.3%	46.3%	2.0%	20.7%	0.0%	100.0%
Level-1 4	4	Frequency	24	40	28	143	113	0	348
		Percentage	6.9%	11.5%	8.0%	41.1%	32.5%	0.0%	100.0%

Level-15	4	Frequency	8	12	23	209	93	3	348
		Percentage	2.3%	3.4%	6.6%	60.1%	26.7%	0.9%	100.0%
Level-16	4	Frequency	28	58	15	132	107	8	348
		Percentage	8.0%	16.7%	4.3%	37.9%	30.7%	2.3%	100.0%
Level-17	4	Frequency	32	15	40	86	173	2	348
		Percentage	9.2%	4.3%	11.5%	24.7%	49.7%	0.6%	100.0%
Level-18	3	Frequency	32	114	105	15	81	1	348
		Percentage	9.2%	32.8%	30.2%	4.3%	23.3%	0.3%	100.0%
Level-19	4	Frequency	6	5	15	237	85	0	348
		Percentage	1.7%	1.4%	4.3%	68.1%	24.4%	0.0%	100.0%
Level-110	2	Frequency	7	128	21	24	166	2	348
		Percentage	2.0%	36.8%	6.0%	6.9%	47.7%	0.6%	100.0%
Level-111	4	Frequency	25	31	64	149	78	1	348
		Percentage	7.2%	8.9%	18.4%	42.8%	22.4%	0.3%	100.0%
Level-112	2	Frequency	32	131	16	56	113	0	348
		Percentage	9.2%	37.6%	4.6%	16.1%	32.5%	0.0%	100.0%
Level-113	2	Frequency	27	172	18	33	97	1	348
		Percentage	7.8%	49.4%	5.2%	9.5%	27.9%	0.3%	100.0%
Level-114	2	Frequency	23	83	12	75	155	0	348
		Percentage	6.6%	23.9%	3.4%	21.6%	44.5%	0.0%	100.0%
Level-115	1	Frequency	175	52	16	29	76	0	348
		Percentage	50.3%	14.9%	4.6%	8.3%	21.8%	0.0%	100.0%
Level-116	4	Frequency	12	15	71	171	78	1	348
		Percentage	3.4%	4.3%	20.4%	49.1%	22.4%	0.3%	100.0%
Level-117	2	Frequency	23	80	45	21	178	1	348
		Percentage	6.6%	23.0%	12.9%	6.0%	51.1%	0.3%	100.0%

Level-118	2	Frequency	32	193	20	22	79	2	348
		Percentage	9.2%	55.5%	5.7%	6.3%	22.7%	0.6%	100.0%
Level-119	1	Frequency	100	17	57	10	164	0	348
		Percentage	28.7%	4.9%	16.4%	2.9%	47.1%	0.0%	100.0%
Level-120	4	Frequency	39	36	54	46	171	2	348
		Percentage	11.2%	10.3%	15.5%	13.2%	49.1%	0.6%	100.0%
Level-21	1	Frequency	202	26	27	15	76	2	348
		Percentage	58.0%	7.5%	7.8%	4.3%	21.8%	0.6%	100.0%
Level-22	1	Frequency	92	55	28	53	119	1	348
		Percentage	26.4%	15.8%	8.0%	15.2%	34.2%	0.3%	100.0%
Level-23	4	Frequency	2	19	19	239	68	1	348
		Percentage	0.6%	5.5%	5.5%	68.7%	19.5%	0.3%	100.0%
Level-24	2	Frequency	23	197	15	32	78	3	348
		Percentage	6.6%	56.6%	4.3%	9.2%	22.4%	0.9%	100.0%
Level-25	2	Frequency	17	109	97	11	114	0	348
		Percentage	4.9%	31.3%	27.9%	3.2%	32.8%	0.0%	100.0%
Level-26	1	Frequency	187	30	38	7	82	4	348
		Percentage	53.7%	8.6%	10.9%	2.0%	23.6%	1.1%	100.0%
Level-27	1	Frequency	62	47	48	43	148	0	348
		Percentage	17.8%	13.5%	13.8%	12.4%	42.5%	0.0%	100.0%
Level-28	4	Frequency	17	22	40	104	164	1	348
		Percentage	4.9%	6.3%	11.5%	29.9%	47.1%	0.3%	100.0%
Level-29	1	Frequency	199	26	12	47	64	0	348
		Percentage	57.2%	7.5%	3.4%	13.5%	18.4%	0.0%	100.0%
Level-210	2	Frequency	126	77	38	14	93	0	348
		Percentage	36.2%	22.1%	10.9%	4.0%	26.7%	0.0%	100.0%

Level-2 11	3	Frequency	29	56	95	53	110	5	348
		Percentage	8.3%	16.1%	27.3%	15.2%	31.6%	1.4%	100.0%
Level-2 12	3	Frequency	24	71	116	21	101	15	348
		Percentage	6.9%	20.4%	33.3%	6.0%	29.0%	4.3%	100.0%
Level-2 13	4	Frequency	51	96	28	60	103	10	348
		Percentage	14.7%	27.6%	8.0%	17.2%	29.6%	2.9%	100.0%
Level-2 14	1	Frequency	32	96	60	42	118	0	348
		Percentage	9.2%	27.6%	17.2%	12.1%	33.9%	0.0%	100.0%
Level-2 15	2	Frequency	90	114	18	15	109	2	348
		Percentage	25.9%	32.8%	5.2%	4.3%	31.3%	0.6%	100.0%
Level-2 16	2	Frequency	25	128	53	13	127	2	348
		Percentage	7.2%	36.8%	15.2%	3.7%	36.5%	0.6%	100.0%
Level-2 17	1	Frequency	59	49	120	27	87	6	348
		Percentage	17.0%	14.1%	34.5%	7.8%	25.0%	1.7%	100.0%
Level-2 18	1	Frequency	76	42	64	20	145	1	348
		Percentage	21.8%	12.1%	18.4%	5.7%	41.7%	0.3%	100.0%
Level-2 19	1	Frequency	100	21	48	29	149	1	348
		Percentage	28.7%	6.0%	13.8%	8.3%	42.8%	0.3%	100.0%
Level-2 20	1	Frequency	48	24	56	30	190	0	348
		Percentage	13.8%	6.9%	16.1%	8.6%	54.6%	0.0%	100.0%

The above tables clearly show that all the questions of different levels are answered by students. The correct options is marked as correct option by the students are very low. It shows that students have not solved the questions correctly and there is a problem in understanding and solving the questions. Such question need to be thoroughly examined keeping in mind the other options (not correct option) provided with the question.

Objective 4.02.05: TO ASSESS THE EFFECTIVENESS OF CLASS ROOM TEACHING-LEARNING OF MATHEMATICS OF STUDENTS RESIDING IN SLUMS SCHOOL IN MAHARASHTRA.

Effectiveness of classroom teaching and learning a word consisting of various components. It deals with the theory and practices of teaching. It informs about teaching strategies, teacher's activities and teacher's judgment and decisions taken during different practices at various places of activities. Therefore, in this objective, it was necessary to analyze and spell out various parameters related to teaching learning practices with particular reference to mathematics teaching at elementary stage of education. The parameters identified at the first stage include:

1. Constructivism in Teaching and Learning
2. Involvement of Learners in Teaching – learning
3. Active participation
4. Use of verities of Teaching – learning strategies.
5. Assessment and feedback during Teaching – learning.
6. Joyful learning.
7. Use of lab activities.
8. Problem solving using Action Research.
9. ICT Integration in Teaching – learning

The so identified parameters at the first stage were validated by the experts working for the classroom Teaching- Learning process and modified as per suggestions and discussions. The parameters finally arrived at are as follows:

1. Learners participation in Teaching - learning
2. Use of verities of Teaching – learning strategies.
3. Assessment and feedback during Teaching – learning.
4. Joyful learning.
5. Use of laboratory activities.
6. ICT Integration in Teaching – learning.
7. Problem solving using Action Research.

The above mentioned parameters were used in present objective for further analysis.. In the following pages parameter wise data related to above objective is presented and interoperated.

Objective 4.02.05.01: To assess the effectiveness of classroom teaching learning of involvement of learners in teaching- learning of Mathematics.

As can be seen from the Class room observation schedule for observing different teaching learning practices parameters appendix-1) statements 1, 2, 3, 4, 7, 8, 10, 12, 16 and 33 are related to the pedagogical parameter of "Involvement of learners in teaching- learning." Therefore, mean scores of the above mentioned statements are the observed score under parameter 1.

The table no. 4.01 presents the statement wise observations of the researcher on the parameter of involvement of learners in teaching- learning in absolute and relative (percentage) form with respect to the states of Maharashtra.

Table 4.01

Involvement of Learners in Teaching-learning of Mathematics

Statement No	Involvement of learners in Teaching-Learning	Response				If Yes					
		Absolute		Percentage		Absolute			Percentage		
		Yes	No	Yes	No	To Great Extant	To Some Extant	Not at all	To Great Extant	To Some Extant	Not at all
1	Teaching-learning process is completed with participation of children.	18	0	100.00	00.00	4	14	0	22.22	77.78	00.00
2	Children work in small groups in class.	10	8	55.56	44.44	2	6	2	20.00	60.00	20.00
3	Children get opportunities to speak during teaching in class.	14	4	77.77	22.23	6	8	0	42.85	57.15	00.00
4	Children get opportunities to think, understand and reason on mathematical problems on giving response.	14	4	77.77	22.23	0	12	2	00.00	85.71	14.29
7	Teacher tried to know the process of solving a question before the child solves it.	12	6	66.66	33.34	2	10	0	16.66	83.34	00.00
8	Teacher gave children the opportunity to share experiences in the class.	18	0	100.00	00.00	2	16	0	11.11	88.89	00.00
10	Children were given opportunities to ask questions in the class at any time	14	4	77.77	22.23	8	6	0	57.14	42.86	00.00
12	Children were given opportunity to frame their own questions.	8	10	44.44	55.56	4	4	0	50.00	50.00	00.00
16	All children get equal opportunities in the class.	14	4	77.77	22.23	4	10	0	28.57	71.43	00.00
33	The students were given chance to solve the numerical on the board.	16	2	88.88	11.12	2	12	2	12.50	75.00	12.50
Mean		13.8	4.2	76.66	23.34	3.4	9.8	0.6	26.10	69.23	4.67

From the above table it can be observed that 69.23 % followed the involvement of learners in teaching- learning to the some extent while only 26.10 percent followed the same to only great extent.

If the value of mean observations are considered, 3.8 (n=18) applied the pedagogical practice on this parameter to the great extent, 9.8 (n=18) applied the teaching learning practice on this parameter to the some extent while remaining 0.6 (n=18) applied it to not at all.

It can be inferred from the above interpretations of the data that there is some extent of involvement of learners in teaching-learner process in Maharashtra state under investigation. It is revealed from the data that all activities in the classroom were not child-centered. Students do not perform the activities and solve the given problem collectively.

Objective 4.02.05.02: To assess the effectiveness of class room teaching against use of variety of teaching learning strategies in mathematics.

As can be seen from the Class room observation schedule for observing different teaching learning practices, (appendix 2) statements 5, 6, 13, 14, 15, 17, 18,19, 25 and 27 are related to the teaching learning parameter of use of variety of teaching learning strategies. Therefore, sum total of scores of the above mentioned statements are the observed scores under parameter 2.

The table no. 4.02 presents the statement wise observations of the researcher on the parameter of use of variety of teaching learning strategies, in absolute and relative (percentage) form with respect to the states of Maharashtra.

Table 4.02

Use of varieties of Teaching -Learning strategies

Statement No	Involvement of learners in Teaching-Learning	Response				If Yes					
		Absolute		Percentage		Absolute			Percentage		
		Yes	No	Yes	No	To Great Extant	To Some Extant	Not at all	To Great Extant	To Some Extant	Not at all
5	Teacher and children used thought provoking questions during teaching-learning process.	14	4	77.77	22.23	0	14	0	00.00	100.00	00.00
6	Efforts were made for conceptual grip of children on subject matter.	14	4	77.77	22.23	0	12	2	00.00	85.71	14.29
13	The teacher had discussion on the introduction of the lesson.	16	2	88.88	11.12	4	12	0	25.00	75.00	00.00
14	Teacher creates learning situations for children on identification of mathematical problems.	10	8	55.55	44.49	0	10	0	00.00	100.00	00.00
15	Students were given opportunities on exercises beyond the textbook.	4	14	22.22	77.78	0	4	0	00.00	100.00	00.00
17	Mathematical signs were clarified during teaching-learning task.	14	4	77.77	22.23	2	12	0	14.28	85.72	00.00
18	As per content matter appropriate teaching learning approach technique was used in class.	14	4	77.77	22.23	0	14	0	00.00	100.00	00.00
19	The content matter was summarized at the end of the class.	18	0	100.00	00.00	4	14	0	22.22	77.78	00.00
25	Teacher also asked students to come prepared for the next day's topic.	16	2	88.88	11.12	0	16	0	00.00	100.00	00.00
27	Innovative techniques were used in teaching-learning process.	8	10	44.44	55.56	2	6	0	25.00	75.00	00.00
Mean		12.8	5.2	71.11	28.89	1.2	11.4	0.2	8.65	89.93	1.42

From the above table it can be observed that 89.93% observations followed the teaching learning practices of use of variety of teaching learning strategies to the some extent while only 8.65% followed the same to only great extent.

If the same observations are considered in mean terms, out of 18 observations, 11.40 applied the teaching learning practices on this parameter to the some extent while remaining 1.20 applied it to great extent only. It can be inferred from the above interpretations of the data that very less teaching learning strategies are used.

Objective 4.02.05.03: To assess the effectiveness of class room teaching in association with against assessment and feedback during teaching and learning in mathematics.

As can be seen from the class room observation schedule for observing different teaching learning practices, (appendix 3) statements 9, 11, 31, 32 and 34 are related to the parameter of assessment and feedback during teaching and learning in mathematics. Therefore, sum total of scores of the above mentioned statements are the observed scores under parameter 3.

The table no. 4.03 presents the statement wise observations of the researcher on the parameter of assessment and feedback during teaching-learning, in absolute and relative (percentage) form with respect to the states of Maharashtra

Table 4.03

Assessment and Feedback during Teaching and Learning

Statement No	Involvement of learners in Teaching-Learning	Response				If Yes					
		Absolute		Percentage		Absolute			Percentage		
		Yes	No	Yes	No	To Great Extant	To Some Extant	Not at all	To Great Extant	To Some Extant	Not at all
9	Children were helped in realizing their mistakes through discussions in the class	14	4	77.77	22.23	0	14	0	00.00	100.00	00.00
11	Children were given chance to check the work of each-other.	14	4	77.77	22.23	2	12	0	14.28	85.72	00.00
31	The teacher had done continuous assessment during teaching-learning process	10	8	55.55	44.45	2	8	0	20.00	80.00	00.00
32	The students were given home assignment at the end of the class.	18	0	100.00	00.00	0	18	0	00.00	100.00	00.00
34	The previous knowledge of the children was assessed before teaching.	18	0	100.00	00.00	0	18	0	00.00	100.00	00.00
Mean		14.8	3.2	82.21	17.79	0.8	14	0	6.85	93.15	0

From the above table it can be observed that 93.15% observations followed the teaching learning practice of assessment and feedback during teaching and learning to the some extent while only 6.85 % followed the same to only some extent.

If the same observations are considered in mean terms, out of 18 observations 14.00 applied the assessment and feedback in teaching and learning of mathematics to the some extent while remaining 0.80 applied it to great extent only.

Objective 4.02.05.04: To assess the effectiveness of class room teaching against joyful learning of learners in teaching- learning of Mathematics.

As can be seen from the Class room observation schedule for observing different teaching learning practices, (appendix- 4) statements 21, 22, 23, 24, 26, 29 and 30 are related to the teaching learning parameter of Joyful learning of learners in teaching- learning", therefore sum total of scores of the above mentioned statements are the observed score under parameter 4.

The table no. 4.04 presents the statement wise observations of the researcher on the parameter of joyful learning of learners in teaching-learning in absolute and relative (percentage) form with respect to the states of Maharashtra.

Table 4.4

Joyful learning

Statement No	Involvement of learners in Teaching-Learning	Response				If Yes					
		Absolute		Percentage		Absolute			Percentage		
		Yes	No	Yes	No	To Great Extant	To Some Extant	Not at all	To Great Extant	To Some Extant	Not at all
21	Activities got sufficient place during teaching-learning.	14	4	77.77	22.23	2	12	0	14.28	85.72	00.00
22	Maximum illustrations were used during teaching in the class.	8	10	44.44	55.56	2	6	0	25.00	75.00	00.00
23	Teacher used more than one methods to solve a numerical.	10	8	55.55	44.45	0	10	0	00.00	100.00	00.00
24	Local puzzles, riddles, etc. also got place during teaching.	6	12	33.33	66.67	0	4	2	00.00	66.66	33.34
26	The teaching was connected with the real life situations.	8	10	44.44	55.56	0	8	0	00.00	100.00	00.00
29	Students were motivated to think and give local examples in the class during discussions on the topic.	10	8	55.55	44.45	0	10	0	00.00	100.00	00.00
30	The content matter was linked with the daily life activities of the children.	8	10	44.44	55.56	2	6	0	25.00	75.00	00.00
Mean		9.14	8.86	50.78	49.22	0.86	8	0.28	9.18	86.05	4.77

From the above table it can be observed that 86.05% observations followed the teaching learning practice of joyful learning of learners in teaching-learning to the some extent, 9.18% followed great extent while only 4.77 percent followed not at all.

If the value of mean observations are considered, 8.00 (n=18) applied the teaching learning practice on this parameter to the some extent, 0.86 (n=18) great extent while remaining 0.28(n=18) applied it not at all only.

Objective 4.02.05.05: To assess the effectiveness of class room teaching against use of Laboratory activities in teaching- learning of Mathematics.

It will be appropriate to mention here that laboratory activities in teaching learning of mathematics not only include models, equipments, instruments, etc. used for the purpose of teaching learning of mathematics but also include use of

suitable and appropriate enrichment material locally available for maximizing the effectiveness of explaining the abstract concepts, principles, rules, etc. of mathematics.

As can be seen from the Class room observation schedule for observing different teaching learning practices, (appendix- 5) statements 28 is related to the teaching learning parameter of "Use of laboratory activities in teaching-learning", therefore, score of the above mentioned statement is the observed score under parameter 5.

The table no. 4.05 presents the statement wise observation of the researcher on the parameter of Use of laboratory activities in teaching- learning in absolute and relative (percentage) form with respect to the states of Maharashtra.

Table 4.05

Use of laboratory activities

Statement No	Involvement of learners in Teaching-Learning	Response				If Yes					
		Absolute		Percentage		Absolute			Percentage		
		Yes	No	Yes	No	To Great Extant	To Some Extant	Not at all	To Great Extant	To Some Extant	Not at all
28	Local materials were used in teaching-learning process	10	8	55.55	44.45	4	6	0	40.00	60.00	00.00
Mean		10	8	55.55	44.45	4	6	0	40.00	60.00	00.00

From the above table it can be observed that 60.00% observations followed the practice of involvement of learners in teaching- learning to the some extent while only 40.00 percent followed the same to only great extent.

If the value of mean observations are considered, 6 (n=18) applied the practice on this parameter to the some extent while remaining 04 (n=18) applied it to great extent only.

Objective 4.02.05.06: To assess the effectiveness of class room teaching against ICT integration in teaching- learning of Mathematics.

As can be seen from the Classroom observation schedule for observing different teaching learning practices, (appendix-6) statements 35 is related to the ICT integration in teaching- learning of Mathematics.

Therefore, the score of the above mentioned statement is the observed score under parameter 6.

The table no. 4.06 presents the statement wise observations of the researcher on the parameter of ICT integration in teaching-learning of Mathematics in absolute and relative (percentage) form with respect to the states of Maharashtra.

Table 4.06

ICT Integration in teaching -learning

Statement No	Involvement of learners in Teaching-Learning	Response				If Yes					
		Absolute		Percentage		Absolute			Percentage		
		Yes	No	Yes	No	To Great Extant	To Some Extant	Not at all	To Great Extant	To Some Extant	Not at all
35	ICT was used in the teaching-learning process.	4	14	22.22	77.78	0	2	2	00.00	50.00	50.00
	Mean	4	14	22.22	77.78	0	2	2	00.00	50.00	50.00

The table no. 4.06 presents the statement wise observations of the researcher on the parameter of ICT integration in teaching-learning in absolute and relative (percentage) form with respect to states of Maharashtra.

From the above table it can be observed that 50% observations followed the practice of involvement of learners in teaching-learning to the some extent while 50% followed the same to only not at all.

If the value of the observation is considered, 02 (n=18) applied the practice on this parameter to the some extent while remaining 02 (n=18) applied it to not at all only.

Objective 4.02.05.07: To assess the effectiveness of class room teaching against Problem solving using Action Research in teaching- learning of Mathematics.

Problem-solving using action research in teaching-learning of mathematics is a task indirectly being applied by the teacher outside the classroom. Therefore, observation schedule for observing different pedagogical practices has no statement related to this parameter.

The data from teachers of Maharashtra reveals that problem-solving through action research is being not used when situation arises. One of the mathematics teacher mentioned that he/she not used action research for solving the problem of removing the fear of mathematics from the minds of weak students.

Chapter: Five

Executive Summary

5.01 Introduction:

One of the major objectives of teaching mathematics is to enable children to keep both speed and accuracy in mathematical operations. Teaching of mathematics in the class is not only concerned with the computational knowledge of the subject but is also concerned with the selection of the mathematical content and communication leading to its understanding and application. The main goal of mathematics education in schools is to stimulate analytical thinking process of the children. Clarity of thoughts and pursuing assumptions to logical conclusions is central to the mathematical enterprise. So while teaching mathematics one should use the teaching methods, strategies and pedagogic resources that are much more fruitful in gaining adequate responses from the students than we have ever had in the past. The teaching and learning of mathematics is a complex activity and many factors determine the success of this activity. The nature and quality of instructional material, the presentation of content, the pedagogic skills of the teacher, the learning environment, the motivation of the students are all important and must be kept in view in any effort to ensure quality in teaching-learning of mathematics. The numerical and spatial problems which they encounter at home, in the school and in the community can be used as examples to inculcate practical concepts. Mathematics should help children in developing understanding of key mathematical concepts at each level through appropriate exercises with things from the physical world and environment. It should help children develop an understanding from the concrete to the abstract, from the specific to the general.

The nature of mathematics teaching significantly affects the nature and outcomes of student learning.

It is widely believed and reported that the performance of students in Mathematics in the whole country in general and Maharashtra state in particular at Upper Primary level has not been satisfactory. Recent NAS data reports that achievement of students in mathematics at upper primary level in Maharashtra is % only. The situation it is expected to be further worsed in slum areas of Maharashtra. This caused a great concern of various stakeholders of the education system. Lot of argument and counter arguments are put forth. However, the actual reasons for this have not yet been scientifically explored. There is a need to look at the performance, causes of common mistakes committed and learning difficulties of students with a critical mind and assess them properly. This highlights the huge responsibility teachers have for their students' mathematical well-being.

It is imperative that we understand what effective mathematics teaching looks like and what teachers can do to break learning difficulties of students. To achieve this, teachers must first demystify the subjects by the way they approach them. They need to use teaching methods that are capable of creating and maintaining students' interest and intrinsic motivation in the subjects. In terms of teaching, the use of language that is suitable to the level of the learners is highly recommended (Kalisk, 1979). Teaching methods should also involve students to learn things practically through activities or manipulations done preferably collaboratively (Dodd, 1992). Pro-social teaching and learning methods are desired to increase interaction and minimize isolation (Dodd, 1992). In some cases, team teaching is necessary if a regular teacher needs help from a specialist. More training is highly desirable to increase the teachers' knowledge skills and confidence in order to handle learning difficulties students' face.

5.02 Specific Objectives of the study: The major objectives of this study were:

6. To find out the achievement level in Mathematics at upper primary level of students residing in Slums of Maharashtra.
7. To identify the specific problems faced by the children in learning Mathematics at upper primary level of slum areas and their causes.
8. To analyze the types of process mistakes committed by students residing in slums during Mathematics process.
9. To study the distracter-wise analysis of responses given by students during Mathematics process.
10. To assess the effectiveness of classroom teaching-learning of Mathematics of students residing in slums schools in Maharasta state.

5.03 Research Questions/Hypotheses: The following research questions were formulated for this study-

6. What is the achievement level in Mathematics at upper primary level of students residing in Slums of Maharashtra?
7. What types of specific problems are faced by the children in learning Mathematics at upper primary level of slum areas and their causes?
8. What types of process mistakes committed by students residing in slums during Mathematics process?
9. What types of distracter-wise analysis of responses given by students during Mathematics process?
10. What types the effectiveness of classroom teaching-learning of Mathematics of students residing in slums schools in Maharasta state.

5.04.01 Population: All the upper primary schools students residing in slums of Maharashtra state constitute the population of the study.

5.04.02 Sample:

For this study 9 upper Primary schools were selected on the consideration of randomness as well as purposive. On of the important logic behind selection of these schools was logistic convenience and prior information about status of mathematics learning in those schools. The detailed information of the sample size is given below in tabular form-

Sl. No	Medium wise Students	Class						Total		
		VI		VII		VIII				
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total
1	Hindi	78	78	98	89	78	66	254	233	487
2	English	53	47	52	54	51	46	156	147	303
3	Marathi	32	32	43	37	65	42	140	111	251
	Total	163	157	193	180	194	154	550	491	1041
Percentage		**50.90**	**49.01**	**51.70**	**48.30**	**55.70**	**44.3**	**52.83**	**47.17**	**100.00**

The ratios of boys and girls in the selected sample is presented in the following pie chart-

5.05 Tools Used:

In the present investigation the achievement test developed by the researcher in the workshop mode and classroom observation schedules were used for collection of appropriate data. The details of these two tools are used in the study are given below-

(I) Students' achievement tests in mathematics:

Achievement Test for class 6^{th}, 7^{th} and 8^{th} were developed at two level covering all most two-third of syllabus keeping in mind the tentative completion of the content till the month of December. .

(II) Mathematics Class room observation schedule for Mathematics teaching: Classroom Observation schedule for observing classroom processes/teaching-learning processes of the mathematics was another important tool for the present study. This tool was prepared to cover following broad areas-

i. Students' participation in classroom and group activities
ii. Process of Thought provoking in Children
iii. Students ability to solve problems in mathematics
iv. Child centric approach being followed in Classroom
v. Use of ICT in Classroom Teaching-Learning process
vi. At the end of the class - lesson summarization process.
vii. Connecting chapter to Day-to-Day activities
viii. Games being given equal importance as studies

All the statements desired observations on implementation of the pedagogical aspects of the classroom teaching on three modes, 'to a great extent', 'to some extent' and 'not at all'. The statements were arranged in the schedule in a random manner to have cross validation of the situations. After initial development of the schedule it was validated with the experts of the area for its correctness. The observation schedule show developed was with 35 statements covering the 7 parameters of the mathematics pedagogical practices. The observation schedule is given in appendix.

5.06 Method of data collection:

After selection of sample schools, the investigator contacted the school authorities and explain them the objective and scope of the study. Accordingly a time schedule was fixed with the school administration. After getting the confirmation, investigator visited the schools with Junior Project fellows and administered the achievement test for the purpose it was developed. To have data regarding the classroom transaction in mathematics in real situation, the researcher along with JPFs also observed the mathematics classroom transactions with the help of class room observation scheduled developed for the purpose. Where-ever was possible other contextual factors like nature of the teacher, his/her relation ship with student etc., associated with mathematics teaching of students of class 6, 7 and 8th were also noted by the researcher.

5.07 Data Analysis:

The data obtained through administration of the tools was classified, tabulated and presented in various forms – tables, diagrams, etc. On the basis of various criterion variables, scores were obtained for the dependent and independent variables for achieving the following purposes-

- Performance level of students in mathematics
- Type of mathematical problems faced by the students.
- Reasons responsible for such problems.

Classification of learning difficulties/problems of students of different levels were analyzed in following heads-

1. Procedure problems
2. Understanding problems

3. Computational problems
4. Conceptual problems
5. Accidental/Incidental problems
6. Not Attempted at all
7. Fully Correct

Quantities analysis was attempted using simple descriptive statistical techniques such as averages; percentages, Mean, Standard deviation, ANOVA etc.

5.08 Delimitations of the study: The limitation of the study was following-

This study focused to know the level of performance, learning difficulties and types of problems faced by students in Mathematics at Upper Primary level. For this study only Mumbai slums upper primary schools were selected.

5.9 Findings of the study: On the bases of learner achievement and classroom observation following references were drawn from the study of common mistakes in mathematics committed by students of upper primary level in the Maharashtra states-

- The mean score of achievement in Mathematics of students belonging to boys and girls category do not differ significantly. It may therefore be said that the achievement of the students in mathematics was found to be independent of gender.
- The mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra, belonging to different classes differ significantly at 0.01 level. It is evident that 't' value for class 6 and class 7 is 8.40 which is significant at 0.01 level df = 691. It reflects that the means scores of achievement in Mathematics of students studying in class 6 and class 7 differ significantly. Further the mean score of achievement in Mathematics of students

studying in class 6 is 15.91 which is significantly lower than those of class 7 whose mean score of achievement in Mathematics of students is 21.64. Therefore it can be said that students studying in class 7 have significantly better achievement in Mathematics than those of class 6. Similarly 't' value for class 7 and class 8 is 9.07 which is significant at 0.01 level (df = 719). It reflects that the means scores of achievement in Mathematics of students studying in class 7 and class 8 differ significant but the means scores of achievement in Mathematics of students studying in class 6 and class 8 do not differ significantly neither at 0.01 nor at 0.05 levels.

- The mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra belonging to different medium differ significantly at 0.01 level. It is evident that 't' value for medium Hindi and medium English is 14.51 which is significant at 0.01 level (df = 788). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in Hindi and English medium differ significant. Further the mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in Hindi medium 22.01 which is significantly higher than those of English medium whose mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra 13.36. Therefore we said that student studying in Hindi medium have better achievement in Mathematics than those of English medium. Similarly 't' value for English medium and Marathi medium is 3.30 which is significant at 0.01 level (df = 552). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in English medium and Marathi medium differ significant. So we said that student studying in Marathi medium (Mean

Score=15.45) have better achievement in Mathematics than those of English medium (Mean Score=13.36). Similarly the means scores of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra studying in Hindi medium and English medium differ significantly at 0.01 level ($t = 9.30$, $df = 736$).

- The interaction between gender and class of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 9.52 which is significant (Vide Table 4.2.1) at 0.01 level. It reflects significant influence of interaction between gender and class on achievement in Mathematics at upper primary level of students residing in slums of Maharashtra. Similarly the interaction between gender and medium of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 3.87 which is significant (Vide Table 4.2.1) at 0.05 level not at 0.01 level. It reflects significant influence of interaction between gender and medium on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.
- The interaction between Class and medium of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 22.91 which is significant (Vide Table 4.2.1) at 0.01 level. It reflects significant influence of interaction between class and medium on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.
- The interaction between gender, class and medium of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 5.45 which is significant (Vide Table 4.2.1) at 0.01 level. It reflects significant influence of interaction between gender, class and medium on achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra.

- The mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra belonging to different Monthly Income group differ significantly at 0.01 level. In order to know which group mean score of achievement in Mathematics of students differs significantly data were further analyzed with the help of 't' test. It is evident that 't' value for families level-1 and level-2 is 2.00 which is significant at 0.05 level but not at 0.01 level (df = 815). It reflects that the means scores of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra in level-1 and level-2 classes family students differ significant. Further the mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra belong in level-1 families is 19.43 which is significantly greater than those of level-2 families whose mean score of achievement in Mathematics at upper primary level of students residing in Slums of Maharashtra is 18.11. Therefore we can say that student belong in level-1 families have better achievement in Mathematics than those of level-2 families. The 't' value for families of level-1 and level-3 is 5.16 which is significant at 0.01 level (df = 537). It reflects that the means scores of achievement in Mathematics achievement at upper primary level of students residing in Slums of Maharashtra belong in level-1 and level-2 families differ significant. Similarly 't' value for families level-2 and level-3 is 3.95 which is significant at 0.01 level (df = 724). It reflects that the means scores of achievement in Mathematics achievement at upper primary level of students residing in Slums of Maharashtra belong in level-2 and level-3 families differ significant.
- The families size-wise mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra belonging to

different families size group do not differ significantly at 0.05 level. Similarly the father occupation-wise mean score of achievement in Mathematics at upper primary level of students residing in slums of Maharashtra belonging to different families size group do not differ significantly between service class, self business and labor class. So there is no significant influence of father Occupation on achievement in Mathematics at upper primary level of students residing in slums of Maharashtra.

- In case of different mediums, more Hindi medium children were able to solve it in comparison to English medium children. Similarly, girls were able to solve more difficult questions in comparison to boys.
- The distracter-wise analysis of responses given by students during mathematics process clearly shows that all the questions of different levels are answered by students. The correct option is marked as correct option by the students are very low. It shows that students had not solved the questions correctly and there is a problem in understanding and solving the questions. Such question need to be thoroughly examined keeping in mind the other options (not correct option) provided with the question. However, there is further scope to analyze the responses given and specify the process problems.

- The type of problems varies from question to question and also from students to students.
- The type of process mistakes varies from question to question and also from students to students.

On the basis of 18 classroom observations of class 6 to 8 of different mediums following inferences are drawn-

- Classroom setting was mono grade. Students were observed sitting sex-wise. Students were seen setting on the benches in the row-wise position. In the schools 77.77% classroom had inadequate space available for group activity in the classroom.
- The availability of other supplementary material in the classrooms was found inadequate in nearly all schools. In the schools, most of the teachers do not use Teaching Learning Material in the classroom for introducing the lesson. In (11.12%) classroom teachers did not involve students for introducing a lesson.
- In 28.89% of the schools classroom activity was found to be teacher centered. The method of teaching the lesson in mathematics was teacher dominated. During classroom teaching, the teachers did not ask the students question and used only the blackboard during teaching.
- They did not use any teaching learning material during classroom transaction. None of the students asked the teacher any question.
- In only 82.21% classrooms of schools, teachers assessed the students during classroom teaching. The modes of learner's assessment are based on written and oral test.
- No teacher provided any types of remedial measures during classroom teaching.
- All the schools teacher give home work to the students. The nature of home work is book based. The assessment of home work is not with involvement of students. Many times, teachers do not check the answer books of the home work regularly.
- Only 60% school teachers assess student's performance daily and 100% teachers assess student's performance monthly, quarterly and annually.
- All teachers of school under study started lesson timely. During classroom teaching about 40% students clearly understood the aim of the lesson.

While observing students related activities it was found that:

- The was no planning for delivery of lesson in the class room.
- 30% classroom teachers allowed to students to take some responsibility to organized activities for own learning.
- Only 30% classes appropriate resources for planned activities were found.
- In 45% of the classroom, environment was found orderly and work centered.
- In 35% classroom the interaction among pupils was positive and cooperative.
- In 29% class teachers encouraged students to contribute to the classroom and group activities.
- Over all 25% classroom teachers were found to be effective in motivating the pupils.
- 30% teachers are able to effectively communicate the content to the students.
- Only 50% teachers are able to relate new ideas to familiar concepts.
- Only 10-22% school teachers used audiovisual materials to support the lesson.
- After teaching the class, most of the teachers did not summarize the lesson in an appropriate manner.

5.10 Implication of Study:

On the basis of research finding following implication, to improve achievement in mathematics of students, can be mad:

- Training of teachers may be undertaken in pedagogical process related to classroom teaching, content transaction, students' participation, test development, scoring and its further implication, preparing additional material etc., for making classroom more live and effective.
- Teachers shoul further analyzed type of mistake, process problems committed by most of the students and should discussed these in the class rooms for the improvement purpose.

- Based on further analysis of distractors, teacher should identify the different type of errors while attempting mathematics question and provide clarifications on these errors during the classroom discussion on the content.
- Teacher should be encouraged to use additional learning material other than textbooks in the class room for making class room teaching live.
- Frequent test related to learners' achievements should be conducted so that students get enough opportunity for practice and to understand the basic strength and weakness of the students in mathematics.
- Intensive and special training be conducted to integrate mathematics with other subject to make the teaching of Mathematics more attractive and useful.
- As suggested in the recommendation, emphases to appoint separate Mathematics teacher to teach mathematics be given.
- Teachers are encouraged to analyze the National Achievement Survey result in there own contexts and try to find out the ways and means to improve mathematics teaching.

Tools

Regional Institute of Education, Bhopal

Achievement Test Class - 6

Level - 1

UDISE Code.....Cluster .....

Name of School.....Name of Student.....
Gender: (Boy/Girl).....Caste: (SC/ST/OBC/ General/ Others).....

Occupation: (Father's).....(Mother's).....

No. of members in family.....Monthly Family Income.....

INSTRUCTIONS

1. There are total 20 questions in this booklet. Try to attempt all questions.
2. You have total 120 Minutes to answer the questions; first you solve the numerical at the given space and tick the answer in the given options.
3. Every question has four options, 1, 2, 3 and 4; out of them only one is the correct answer.
4. Choose the option carefully, as stated below:

Illustration: 4 pens cost Rs. 20 then what will be price of 8 pens.
First you solve the question in the given space as stated below:

$\because$ 4 Pens cost Rs. 20.

$\therefore$ 1 Pen costs Rs. $\frac{20}{4}$

$\therefore$ 8 Pens cost Rs. $\frac{20}{4} \times 8 = 40$ Rs.

This can be solved with other methods also.

After this the tick mark (√)will be put in the correct option of answer.

1. Rs. 32 2. Rs 40 3. Rs 20 4. Rs 16

As per solution the correct answer is 40 of option 2. Hence, put a tick on option 2 as given below:

1. Rs32 √2.. Rs 40 3. Rs 20 4. Rs 16

Q. 1:	(–8) – (–1) – 4 is equal to : **Solution:**
	1. – 13 2. – 11 3. 13 4. 1
Q. 2:	The place value of five in the number 685300 is : **Solution:**
	1. Five 2. Fifty 3. Five thousand 4. five lakhs
Q. 3	The value of 1640 – 1325 is: **Solution:**
	1. 615 2. 315 3. 325 4. 625
Q. 4	The value of 372 + (620÷62) is: **Solution:**
	1. 3720 2. 1054 3. 16 4. 382
Q. 5:	The value of 12 × 4 × 25 is: **Solution:**
	1. 400 2. 112 3. 1200 4. 41

Q. 6:	The total of - 29 and – 70 is: **Solution:**			
	1. –41	2. 41	3. 99	4. –99
Q. 7:	The total of – 86 and 36 is: **Solution:**			
	1. 50	2. 122	3. – 122	4. – 50
Q. 8:	Which number has to be deducted from 20 to get 6? **Solution:**			
	1. – 6	2. – 14	3. 14	4. 6
Q. 9:	The value of 315 ÷ 3 is: **Solution:**			
	1. 15	2. 105	3. 1015	4. 318
Q. 10:	The remainder of 4316 ÷17 is: **Solution:**			
	1. 15	2. 17	3. 253	4. 4316

Q. 11:	Out of the $>, <, =$ signs, which is appropriate for the following box? $-4 \square 0$
	1. $>$ 2. $<$ 3. $=$ 4. $>, <, =$
Q. 12:	Out of the $>, <, =$ signs, which is appropriate for the following box? $3 \square -4$
	1. $>$ 2. $<$ 3. $=$ 4. $>, <, =$
Q. 13:	The value of $2\frac{5}{9}$ in the form of improper fraction is: **Solution:**
	1. $\frac{19}{5}$ 2. $\frac{90}{9}$ 3. $\frac{10}{9}$ 4. $\frac{23}{9}$
Q. 14:	The value of $\frac{5}{9} \times \frac{3}{2}$ is: **Solution:**
	1. $\frac{15}{9}$ 2. $\frac{15}{2}$ 3. $\frac{5}{6}$ 4. $\frac{3}{6}$
Q. 15:	The value of $40 + 27 - 7 + 2 - 451$ is: **Solution:**
	1. 379 2. 379 3. 389 4. -389

Q. 16:	The number divisible by 4 is: **Solution:**
	1. 1036 2. 126 3. 1306 4. 1014
Q. 17:	If price of 5 pens is Rs. 20 then the price of 8 pens is: **Solution:**
	1. Rs. 23 2. Rs. 32 3. Rs. 160 4. Rs. 40
Q. 18:	0.275 can be written in the form of fraction, as: **Solution:**
	1. $\frac{275}{100}$ 2. $2\frac{75}{100}$ 3. $\frac{11}{4}$ 4. $\frac{275}{1000}$
Q. 19:	The ratio between Rs. 40 and Rs. 120 is: **Solution:**
	1. 1 : 3 2. 1 : 4 3. 3 : 1 4. 4 : 1
Q. 20:	Shabana got 736 marks out of 800 in the examination, and then what will be the percentage she obtain in the examination? **Solution:**
	1. 64% 2. 92% 3. 6.4% 4. 9.2%

Regional Institute of Education, Bhopal

Achievement Test Class - 6

Level - 2

UDISE Code..... Cluster .....

Name of School.....Name of Student.....
Gender: (Boy/Girl).....Caste: (SC/ST/OBC/ General/ Others).....

Occupation: (Father's).....(Mother's).....

No. of members in family.....Monthly Family Income.....

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$\because$ 4 Pens cost Rs. 20.

$\therefore$ 1 Pen costs Rs. $\frac{20}{4}$

$\therefore$ 8 Pens cost Rs. $\frac{20}{4} \times 8 = 40$ Rs.

This can be solved with other methods also.

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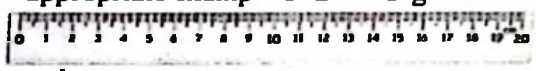
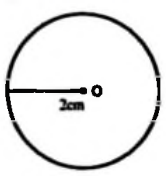
1. Rs32 $\surd$2.. Rs 40 3. Rs 20 4. Rs 16

Q.1:	The value of $905.5 + 27.197$ is: **Solution:**
	1. 1175.697 2. 1175.202 3. 932.697 4. 932.202
Q.2:	H.C.F. of 45 and 30 is: **Solution:**
	1. 45 2. 30 3. 90 4. 15
Q.3:	The simplified form of $20 + \{10 - 5 + (7 - 3)\}$ is: **Solution:**
	1. 29 2. 40 3. 39 4. 20
Q.4:	The number of students in classes I to V in a school are 32, 35, 31, 32 and 30 respectively. The average strength of a class in the school is: **Solution:**
	1. 30 2. 31 3. 32 4. 35
Q.5:	Rani paid Rs.75 for 15 chocolates. How much will Neetu pay for 8 similar chocolates? **Solution:**
	1. Rs. 60 2. Rs. 50 3. Rs. 45 4. Rs. 40

Q.6:	How much money Mohan will get by selling 24.63 kg of old newspapers at the rate of Rs. 3 per kg? **Solution:**
	1. Rs. 72.89 2. Rs. 73.89 3. Rs. 728.90 4. Rs. 738.9
Q.7:	Which of the following is an appropriate example of a line segment? 1. Edge of a ruler  2. Light coming from a torch  3. A string of loosely held thread  4. Edge of a coin 
Q.8:	There are 7500 sheets of papers for making notebooks. Each sheet can be cut to make 9 leaves of a note book. The total number of leaves made from the available sheets is: **Solution:**
	1. 7509 2. 67500 3. 67599 4. 75009
Q.9:	A water tank contains 1500 litres of water. A bucket can hold 12 litres of water. How many such buckets of water can be filled from the water tank? **Solution:**
	1. 151 2. 148 3. 120 4. 125
Q.10:	Which of the following is a prime number? **Solution:**
	1. 9 2. 15 3. 19 4. 25

Q.11:	The area of a rectangular floor with sides 12 m and 8 m is: **Solution:**
	1. 20 sq m 2. 40 sq m 3. 96 sq m 4. 128 sq m
Q.12:	The diameter of the given circle is: 
	1. 2cm 2. 4 cm 3. 5 cm 4. 6 cm
Q.13:	Nikhil purchased 12 guavas 16 Chikus. What is the ratio between the number of Chikus and Guavas? **Solution:**
	1. $\frac{4}{3}$ 2. $\frac{3}{4}$ 3. $\frac{2}{6}$ 4. $\frac{6}{2}$
Q.14:	In a school the number of boys and girls is 384 and 480, respectively. What is ratio between boys and girls in simplified form? **Solution:**
	1. 1 : 4 2. 4 : 1 3. 5 : 4 4. 4 : 5
Q.15:	The price of 25 meter cloth is Rs. 3875, and then what will be price of 17 meter cloth? **Solution:**
	1. Rs. 3875 2. Rs. 2635 3. Rs. 675 4. Rs. 6545

Q.16:	Que. 16: If $X + 3 = 9$, then the value of X is: **Solution:**
	1. 6 2. 12 3. 3 4. -6
Q.17:	The solution of the equation $5x - 2 = 3x + 6$ is: **Solution:**
	1. 1 2. 4 3. -4 4. -1
Q.18:	The sum of two numbers is 50, if out of them one is 20 then what is the other number? **Solution:**
	1. -70 2. 70 3. 30 4. -30
Q.19:	Suyas purchased $2\frac{1}{2}$ Kg. and Aashish $3\frac{1}{2}$ Kg. of sugar. What is the total quantity of sugar purchased by both of them? **Solution:**
	1. 12 $Kg.$ 2. $5\frac{1}{2}$ Kg 3. 5 Kg 4. 6 Kg
Q.20:	What is the angle called? Which is more than 90^0 and less than 180^0? **Solution:**
	1. Obtuse angle 2. Acute angle 3. Simple angle 4. Right angle

Regional Institute of Education, Bhopal

Achievement Test Class - 7

Level - 1

UDISE Code..... Cluster .....

Name of School.....Name of Student.....
Gender: (Boy/Girl).....Caste: (SC/ST/OBC/ General/ Others).....

Occupation: (Father's).....(Mother's).....

No. of members in family.....Monthly Family Income.....

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$\therefore$ 8 Pens cost Rs. $\frac{20}{4} \times 8 = 40$ Rs.

This can be solved with other methods also.

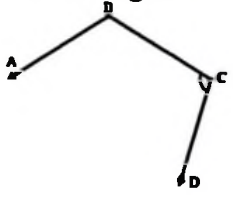
After this the tick mark ($\surd$)will be put in the correct option of answer.

1. Rs. 32 2. Rs 40 3. Rs 20 4. Rs 16

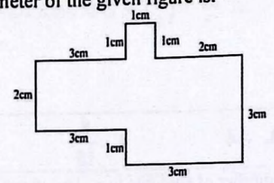
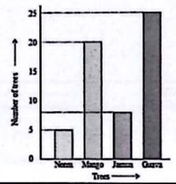
As per solution the correct answer is 40 of option 2. Hence, put a tick on option 2 as given below:

1. Rs32 $\surd$2.. Rs 40 3. Rs 20 4. Rs 16

Q.1:	The value of $(-6) \div 3$ is: **Solution:**
	1. -9 2. -3 3. -2 4. 2
Q.2:	The fraction form of 0.4 is: **Solution:**
	1. $\frac{1}{3}$ 2. $\frac{2}{3}$ 3. $\frac{2}{5}$ 4. $\frac{5}{2}$
Q.3:	The value of 2^{-2} is: **Solution:**
	1. $\frac{1}{4}$ 2. $\frac{1}{-4}$ 3. -4 4. 4
Q.4:	Tell the value of $(2^2)^2$: **Solution:**
	1. 8 2. 16 3. $\frac{1}{8}$ 4. $\frac{1}{16}$
Q.5:	Solve $\frac{15}{7} \div \left(\frac{-5}{7}\right)$: **Solution:**
	1. $-\frac{75}{49}$ 2. $\frac{75}{49}$ 3. -3 4. 3
Q.6:	The decimal form of $8\frac{5}{8}$ is: **Solution:**
	1. 5.0 2. 12.8 3. 13.8 4. 8.6

Q.7:	The decimal form of $5 \div \left(\frac{3}{8}\right) - \frac{1}{3}$ is: **Solution:**
	1. 13 2. 15 3. 10 4. 16
Q.8:	The multiplication result of $-4xy$ and $7y^2$ will be: **Solution:**
	1. $-28\ xy^3$ 2. $-28\ x^3y$ 3. $28\ xy^3$ 4. $28\ x^3y$
Q.9:	The value of $(-3)^2 \times (-5)^2$ will be: **Solution:**
	1. -225 2. -64 3. 64 4. 225
Q.10:	The marked angle in the figure is: 
	1. $\angle ABC$ 2. $\angle BCD$ 3. $\angle CDA$ 4. $\angle CBA$
Q.11:	$5^6 \times 5^{11}$ are equal to: **Solution:**
	1. 25^{17} 2. 5^{17} 3. 5^{66} 4. 25^{66}

Q.12:	The value of $\frac{2}{3} \times \left(\frac{-4}{5}\right)$ is: **Solution:**
	1. $\frac{-2}{15}$ 2. $\frac{-8}{15}$ 3. -4 4. $\frac{8}{15}$
Q.13:	The following pictograph shows the number of students in a class using different modes of travel to reach school: Mode of travel — Number of students Bus — ☺☺☺☺☺ Van — ☺☺☺☺☺☺☺ Cycle — ☺☺☺ Walking — ☺☺☺☺☺☺☺ How many students use van to go to school?
	1. 5 2. 8 3. 7 4. 3
Q.14:	0.527 can be written as: **Solution:**
	1. $\frac{5.27}{100}$ 2. $\frac{52.7}{10}$ 3. $\frac{527}{100}$ 4. $\frac{527}{1000}$
Q.15:	The value of $(-3)^2 \times (-5)^2$ is: **Solution:**
	1. –225 2. –64 3. 64 4. 225
Q.16:	Rahul's bedroom floor is in rectangular shape with length of 4 metres and width of 3.5 metres. What is the area of the floor? **Solution:**
	1. $7.5\ m^2$ 2. $12.25m^2$ 3. $14\ m^2$ 4. $16m^2$

Q.17:	The perimeter of the given figure is: 
	1. 20cm 2. 22cm 3. 24cm 4. 21cm
Q.18:	Following bar graph shows the number of trees of different varieties in a garden. How many more guava trees are there than mango trees? 
	1. 5 2. 10 3. 15 4. 20
Q.19:	The price of 4 Dozen Bananas is Rs. 48. What will be the price of 6 Dozen Bananas? **Solution:**
	1. Rs. 24 2. Rs. 72 3. Rs. 288 4. Rs. 192
Q.20:	A shopkeeper purchased a steel almirah for Rs. 2850 and sold it for Rs. 3420. What is the percentage rate of profit? **Solution:**
	1. 10% 2. 15% 3. 25% 4. 20%

Regional Institute of Education, Bhopal

Achievement Test Class - 7

Level - 2

UDISE Code..... Cluster .....

Name of School.....Name of Student.....

Gender: (Boy/Girl).....Caste: (SC/ST/OBC/ General/ Others).....

Occupation: (Father's).....(Mother's).....

No. of members in family.....Monthly Family Income.....

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First you solve the question in the given space as stated below:

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$\therefore$ 8 Pens cost Rs. $\frac{20}{4} \times 8 = 40$ Rs.

This can be solved with other methods also.

After this the tick mark ($\surd$) will be put in the correct option of answer.

1. Rs. 32 2. Rs 40 3. Rs 20 4. Rs 16

As per solution the correct answer is 40 of option 2. Hence, put a tick on option 2 as given below:

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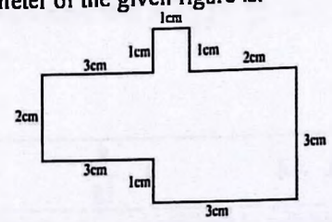
Q.17:	The perimeter of the given figure is: 
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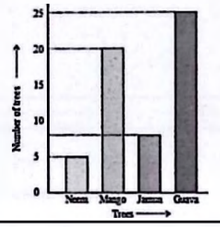
Q.18:	Following bar graph shows the number of trees of different varieties in a garden. How many more guava trees are there than mango trees? 
	1. 5 2. 10 3. 15 4. 20
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Regional Institute of Education, Bhopal

Achievement Test Class - 7

Level - 2

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Q.1:	Arrange $\frac{4}{9}, \frac{-5}{6}, \frac{-7}{-12}, \frac{11}{24}$ in ascending order: **Solution:**
	1. $\frac{-7}{-12}, \frac{11}{24}, \frac{4}{9}, \frac{-5}{6}$ 2. $\frac{-5}{6}, \frac{4}{9}, \frac{11}{24}, \frac{-7}{-12}$ 3. $\frac{11}{24}, \frac{4}{9}, \frac{-5}{6}, \frac{-7}{-12}$ 4. $\frac{-7}{-12}, \frac{-5}{6}, \frac{4}{9}, \frac{11}{24}$
Q.2:	Solution of $\frac{2}{3} \times \left[\frac{3}{4} + \left(-\frac{1}{4}\right)\right]$ will be: **Solution:**
	1. $\frac{2}{3}$ 2. $\frac{1}{8}$ 3. $\frac{1}{3}$ 4. $\frac{1}{4}$
Q.3:	Solve $\left(\frac{7}{8}\right)^2 \div \left(\frac{8}{7}\right)^{-2}$: **Solution:**
	1. $\left(\frac{7}{8}\right)^4$ 2. $\left(\frac{8}{7}\right)^{-4}$ 3. $\left(\frac{7}{8}\right)^0$ 4. 1
Q.4:	Multiples of 5 are 5, 10, 15, ___ Multiples of 6 are 6, 12, 18, ___ The LCM of 5 and 6 is **Solution:**
	1. 10 2. 20 3. 30 4. 60
Q.5:	Calculate interest on Rs. 500 at the rate of 6% per annum will be: **Solution:**
	1. Rs. 9 2. Rs. 90 3. Rs. 900 4. Rs. 9000

Q.6:	The H.C.F. of 21, 49 and 84 is: **Solution:**
	1. 7 2. 14 3. 21 4. 28
Q.7:	The sum of thrice of a number and 6 is 18. It can be expressed algebraically as: **Solution:**
	1. $3x+6=18$ 2. $6x+3=18$ 3. $3x-6=18$ 4. $3x-3=18$
Q.8:	$\frac{4}{7}$ th part of $\left(\frac{2}{5}\right)$ is: **Solution:**
	1. $\frac{4}{7}-\frac{2}{5}$ 2. $\frac{4}{7}+\frac{5}{2}$ 3. $\frac{2}{5}\div\frac{4}{7}$ 4. $\frac{2}{5}\times\frac{4}{7}$
Q.9:	Rajani has 24 toffees; she gave one third of toffees to her younger brother. What is the number of toffees which she gave to her brother? **Solution:**
	1. 8 2. 16 3. 20 4. 21

Q.10:	The present age of Rohan is Y years and his daughter Rohini's present age is one third of his age. Rohini's age can be written in the following form: **Solution:**
	1. $\frac{y}{3}$ Years 2. $3y$ Years 3. $y-3$ Years 4. $y+3$ Years
Q.11:	Population of a village is 800. If, out of them 520 are literate, then tell what will be the percentage of in the illiterate. **Solution:**
	1. 35% 2. 55% 3. 65% 4. 45%
Q.12:	At what rate of interest the principle of Rs. 800 will amount to Rs. 1000 in two years? **Solution:**
	1. 12.5 2. 12 3. 80 4. 10
Q.13:	The multiplication of two numbers is 765 their H.C.F. is 3 then what is their L.C.M.? **Solution:**
	1. 765 2. 3 3. 2295 4. 255

Q.14:	In complementary angle, If $m\angle A = 70^0$ then what will be value of remaining angles of $\angle A$? **Solution:**
	1. 20^0 2. 160^0 3. 110^0 4. 180^0
Q.15:	Find three consecutive numbers coming between $\frac{2}{7}$, $\frac{6}{7}$ are: **Solution:**
	1. $\frac{3}{7}, \frac{4}{7}, \frac{5}{7}$ 2. $\frac{2}{8}, \frac{3}{8}, \frac{5}{8}$ 3. $\frac{3}{7}, \frac{4}{8}, \frac{5}{9}$ 4. $\frac{3}{7}, \frac{4}{7}, \frac{8}{7}$
Q.16:	Convert the $\frac{7}{4}$ number in decimals: **Solution:**
	1. 1.75 2. 5. 72 3. 2.75 4. 0.75
Q.17:	The simplified form of $\left[\left(\frac{15}{12}\right)^3\right]$ is: **Solution:**
	1. $\left(\frac{15}{12}\right)^3$ 2. $\left(\frac{15}{12}\right)^4$ 3. $\left(\frac{12}{15}\right)^{12}$ 4. $\left(\frac{15}{12}\right)^{12}$

Q.18:	Add $17a^2b^2 + 16c$ and $28c - 28a^2b^2$ **Solution:**
	1. $11a^2b^2 + 44c$ 2. $-11a^2b^2 + 44c$ 3. $45a^2b^2 + 44c$ 4. $-45a^2b^2 + 16c$
Q.19:	If the price of 7 Kg. Onion is Rs. 140; then what will be the price if 12 Kg onion? **Solution:**
	1. ₹Rs. 84 2. ₹ Rs. 1680 3. ₹ Rs. 240 4. ₹ Rs. 980
Q.20:	Neha borrowed Rs. 50,000 from bank to purchase a two wheeler at 12% per year. How much she will pay after one year? **Solution:**
	1. Rs. 56000 2. Rs. 5600 3. Rs. 560 4. Rs. 56

Regional Institute of Education, Bhopal

Achievement Test Class - 8

Level - 1

UDISE Code..... Cluster .....

Name of School.....Name of Student.....
Gender: (Boy/Girl).....Caste: (SC/ST/OBC/ General/ Others).....

Occupation: (Father's).....(Mother's).....

No. of members in family.....Monthly Family Income.....

INSTRUCTIONS

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Illustration: 4 pens cost Rs. 20 then what will be price of 8 pens.
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$\because$ 4 Pens cost Rs. 20.

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This can be solved with other methods also.
After this the tick mark (√)will be put in the correct option of answer.

1. Rs. 32 2. Rs 40 3. Rs 20 4. Rs 16

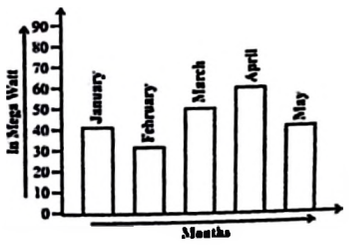
As per solution the correct answer is 40 of option 2. Hence, put a tick on option 2 as given below:

1. Rs32 √2.. Rs 40 3. Rs 20 4. Rs 16

Q.1:	What will be square root of $\frac{9}{16}$? **Solution:**
	1. $\frac{81}{256}$ 2. $\frac{3}{4}$ 3. $\frac{16}{9}$ 4. $\frac{4}{3}$
Q.2:	What will be cube root of 27? **Solution:**
	1. 3 2. 9 3. 81 4. 729
Q.3:	Write indices form of $\sqrt[4]{37}$ ..... **Solution:**
	1. 37^4 2. 4^{37} 3. $37^{\frac{1}{4}}$ 4. $4^{\frac{1}{37}}$
Q.4:	Simplify $(x-4)(x-1)$ **Solution:**
	1. x^2+5x+4 2. x^2-5x-4 3. x^2-3x+4 4. x^2-5x+4
Q.5:	Subtract $\frac{5x}{8}-\frac{3x}{8}=$ **Solution:**
	1. $\frac{1}{4}$ 2. 5 3. $3x$ 4. $\frac{x}{4}$

Q.6:	Find the number set, which is of the form of greatest to smallest? **Solution:**
	1. 0.355, 0.4, 0.43, 0.444 2. 0.4, 0.43, 0.444, 0.355 3. 0.43, 0.355, 0.444, 0.4 4. 0.444, 0.43, 0.4, 0.355
Q.7:	$\frac{5}{7}+\left(\frac{5}{14}x\frac{6}{21}\right)=$ **Solution:**
	1. $\frac{5}{7}$ 2. $\frac{6}{49}$ 3. $\frac{5}{49}$ 4. $\frac{40}{49}$
Q.8:	5^{200} is equal to: **Solution:**
	1. $5^{100}+5^{100}$ 2. $2^{100}+3^{100}$ 3. $5^{100}x5^{100}$ 4. $5^{100}x5^{2}$
Q.9:	Fifth value of 13 is: **Solution:**
	1. 26 2. 39 3. 52 4. 65
Q.10:	Area of a square size is 7056 Sq. Cm; what will be the length of its one side? **Solution:**
	1. 76 Cm. 2. 84 Cm. 3. 86 Cm. 4. 94 Cm.

Q.11:	Simplify$(a+2)(a-1)$? **Solution:**
	1. a^2-a-2 2. a^2-a+2 3. a^2+3a-2 4. a^2+a-2
Q.12:	Find the value of $(81)^{1/4}$: **Solution:**
	1. 9 2. 3 3. 27 4. 81
Q.13:	Divide $(x^2+6x+8) \div (x+4)$ **Solution:**
	1. $x-2$ 2. $x+2$ 3. $x-4$ 4. $x+4$
Q.14:	In a square, length of a side is 4 Cm. what will be the diagonal? **Solution:**
	1. $2\sqrt{4}$ 2. $4\sqrt{2}$ 3. $2\sqrt{2}$ 4. $4\sqrt{4}$
Q.15:	What will be 4 % of 300? **Solution:**
	1. 12 2. 1200 3. 120 4. 75

Q.16:	The value of $15p^3 \div 3p$ will be: **Solution:**
	1. $5p^1$ 2. $5p^4$ 3. $5p^3$ 4. $5p^2$
Q.17:	Solve the equation $\frac{3x+7}{5x-9} = 4$ **Solution:**
	1. $-\frac{43}{17}$ 2. $\frac{43}{17}$ 3. $\frac{17}{43}$ 4. $-\frac{17}{43}$
Q.18:	In the following bar diagram, find the month in which the difference between consumption of electricity is 30 mega Watts? 
	1. February and March 2. February and April 3. April and May 4. March and May
Q.19:	The factors of $2x^2 - 9x + 9$ are: **Solution:**
	1. $(x-3)(2x-3)$ 2. $(x+3)(2x+3)$ 3. $(x-3)(2x+3)$ 4. $(x+3)(2x+3)$
Q.20:	In a school, the total strength of students in class 8 is 37. Students scored following marks in out of 10 in the examination. Calculate average. 2, 4, 4, 8, 6, 7, 3, 8, 9, 10, 10, 8, 9, 7, 6, 5, 4, 6, 7, 8, 4, 8, 9, 7, 6, 5, 10, 9, 7, 9, 10, 9, 6, 9, 9, 4, 7. **Solution:**
	1. 8 2. 9 3. 6 4. 7

Regional Institute of Education, Bhopal

Achievement Test Class - 8

Level - 2

UDISE Code..... Cluster .....

Name of School.....Name of Student.....

Gender: (Boy/Girl).....Caste: (SC/ST/OBC/ General/ Others).....

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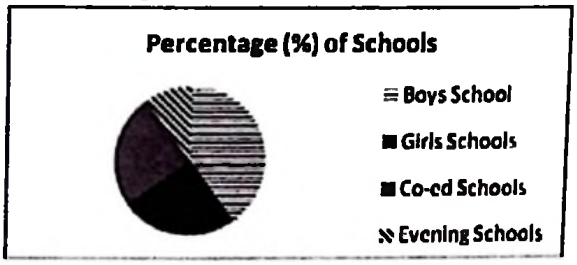
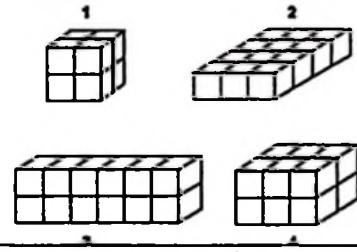
Q.1:	Solve in expended form of $(p+q+3)^2$: **Solution:**
	1. $p^2+q^2+2pq+6q+6p+9$ 2. $p^2+q^2-2pq+6q+6p+9$ 3. $p^3+q^3+2pq+6q+6p+9$ 4. $p^3+q^3-2pq+6q+6p+9$
Q.2:	What are Factors of $2y^2-4y-30$: **Solution:**
	1. $2(y-5)(y+3)$ 2. $2(y-5)(y+5)$ 3. $2(y-5)(y+5)$ 4. $2(y-5)(y+5)$
Q.3:	Calculate square root of the fraction $\frac{625}{1296}$: **Solution:**
	1. $\frac{5}{6}$ 2. $\frac{25}{6}$ 3. $\frac{5}{36}$ 4. $\frac{25}{36}$
Q.4:	Calculate cube root of - 2197: **Solution:**
	1. 13 2. -13 3. 31 4. -31
Q.5:	Solve $(16)^{1/4} \times (81)^{1/4}$ is: **Solution:**
	1. 36 2. 6 3. 1296 4. -6
Q.6:	$(x^2+6x+8) \div (x+4)$ solve it: **Solution:**
	1. $x+2$ 2. $x-2$ 3. x^2+2 4. x^2-2

Q.7:	$\frac{7x^2+18x+8}{49x^2-16} \times \frac{14x-8}{x+2}$ equals to: **Solution:**
	1. 2 2. 4 3. 6 4. 8
Q.8:	Two ratio of numbers 7:8 and its total to 45. Find the numbers. **Solution:**
	1. 21, −24 2. −21,24 3. 7,8 4. 21 ,24
Q.9:	Calculate interest at the rate of 5% on Rs. 1,000 for 2 years. **Solution:**
	1. Rs. 100 2. Rs. 1000 3. Rs. 10 4. Rs. 500
Q.10:	If $a \times b < c \times d$ equals to: **Solution:**
	1. $\frac{a}{b} < \frac{c}{d}$ 2. $\frac{a}{c} < \frac{d}{b}$ 3. $\frac{c}{d} < \frac{a}{b}$ 4. $\frac{d}{b} < \frac{a}{c}$
Q.11:	A table was sold for Rs. 935 after a discount of 15%; what was its written price? **Solution:**
	1. Rs. 150 2. Rs. 935 3. Rs. 1100 4. Rs. 950

Q.12:	Rita and Renu are studying in same class. The marks obtain by them in three subjects are given below: <table><tr><th></th><th>Physics</th><th>Chemistry</th><th>Mathematics</th></tr><tr><td>Rita</td><td>78</td><td>76</td><td>74</td></tr><tr><td>Renu</td><td>72</td><td>82</td><td>74</td></tr></table> Which of the average scores statement is correct in the given below? **Solution:**
	1. Rita's average score is higher than Renu's 2. Rita's average score is lower than Renu's 3. Average score of Rita and Renu are equal 4. Average score of Rita and Renu cannot be compared
Q.13:	The pie-diagram given below shows the distribution of four different types of schools: Boys schools, Girls schools, Co-ed schools and Evening schools.  Which of the following sentence is correct? **Solution:**
	1. Co-ed schools are more than the Boys schools. 2. Boys' schools are more than the one - half of the total schools. 3. Evening schools are more than one - third of the total schools. 4. The total number of Girls' and Co-ed schools is greater than the number of Boys' schools.
Q.14:	A rectangle is formed with 30 cm long thin wire. If, width of this rectangle is 6 cm. what is its length? **Solution:**
	1. 6 cm. 2. 9 cm. 3. 12 cm. 4. 18 cm.
Q.15:	A new bridge is constructed, the average time taken by a bus to travel from one city to another is reduced from 50 minutes to 40 minutes. What is the percentage decrease in time taken to travel between two cities? **Solution:**
	1. 10 % 2. 20 % 3. 45 % 4. 50 %

Q.16:	Area of a square is 7056 Sq. cm. what will be the length of its one side? **Solution:**
	1. 76 cm. 2. 84 cm. 3. 86 cm. 4. 94cm.
Q.17:	In the figures below, small blocks are put together to get bigger blocks. If all the small blocks are of the same size, which one of the bigger blocks will have a different volume than the others? 
Q.18:	The age of Ravi's father is 5 more than three times of Ravi's age. If the age of Ravi's father is X years, then how will you represent Ravi's age? **Solution:**
	1. $3x + 5$ 2. $(x - 5)/3$ 3. $3(x + 5)$ 4. $(x/3) - 5$
Q.19:	The task of harvesting groundnuts in a field is completed by 15 women in 8 days. How many women will be needed is the task has to be completed within 6 days? **Solution:**
	1. 20 Women 2. 25 Women 3. 30 Women 4. 15 Women
Q.20:	Measure of adjacent angles of a parallelogram measure $(5x - 7)^o$ and $(4x + 25)^o$ then the other angles will measure: **Solution:**
	1. 83^o and 97^o 2. 81^o and 97^o 3. 83^o and 95^o 4. 81^o and 95^o

REGIONAL INSTITUTE OF EDUCATION, BHOPAL

(Format for observation of Pedagogical Processes)

Name of School .... Cluster .....

Block .... District .... State ....

General information (to be filled after/at the time of class observation)

Class .... Section .... Topic ....

Name of Teacher .... (Male/Female) ....

Educational and Professional Qualifications .... Age .....

Years Experience .... Yrs.

No. of Students in the class .... (total) Boys ..... Girls .....

No. of Students in the school .... (total) Boys ..... Girls ....

Pedagogical Process Observation

S. No.	Statement	Yes	No	If 'Yes' then		
				To great extent	To some extent	Not at all
1.	Teaching-learning process is completed with participation of children.					
2.	Children work in small groups in class.					
3.	Children get opportunities to speak during teaching in class.					
4.	Children get opportunities to think, understand and reason on mathematical problems on giving response.					
5.	Teacher and children used thought provoking questions during teaching-learning process.					
6.	Efforts were made for conceptual grip of children on subject matter.					
7.	Teacher tried to know the process of solving a question before the child solves it.					
8.	Teacher gave children the opportunity to share experiences in the class.					
9.	Children were helped in realizing their mistakes through discussions in the class					
10.	Children were given opportunities to ask questions in the class at any time					
11.	Children were given chance to check the work of each-other.					
12.	Children were given opportunity to frame their own questions.					
13.	The teacher had discussion on the introduction of the lesson.					

14.	Teacher creates learning situations for children on identification of mathematical problems.					
15.	Students were given opportunities on exercises beyond the textbook.					
16.	All children get equal opportunities in the class.					
17.	Mathematical signs were clarified during teaching-learning task.					
18.	As per content matter appropriate teaching learning approach technique was used in class.					
19.	The content matter was summarized at the end of the class.					
20.	The teacher was confident at the time of teaching.					
21.	Activities got sufficient place during teaching-learning.					
22.	Maximum illustrations were used during teaching in the class.					
23.	Teacher used more than one method to solve a numerical.					
24.	Local puzzles, riddles, etc. also got place during teaching.					
25.	Teacher also asked students to come prepared for the next day's topic.					
26.	The teaching was connected with the real life situations.					
27.	Innovative techniques were used in teaching-learning process.					
28.	Local materials were used in teaching-learning process.					
29.	Students were motivated to think and give local examples in the class during discussions on the topic.					
30.	The content matter was linked with the daily life activities of the children.					
31.	The teacher had done continuous assessment during teaching-learning process.					
32.	The students were given home assignment at the end of the class.					
33.	The students were given chance to solve the numerical on the board.					
34.	The previous knowledge of the children was assessed before teaching.					
35.	ICT was used in the teaching-learning process.					

Major strengths of the Pedagogical Practices.

Major weaknesses of the Pedagogical Practices

Suggestions

Other points on the basis of the observation

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