| CHAPTER NO. | CHAPTER NAME |
|---|---|
| 1 | Fractions in Disguise |
| 2 | The Baudhayana-Pythagoras Theorem |
| 3 | Proportional Reasoning-2 |
| 4 | Exploring some geometric themes |
| 5 | Tales by Dots and Lines |
| 6 | Algebra Play |
| 7 | Area |

| | |
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| TEACHER NAME: Sumit Bhardwaj | SCHOOL NAME: PM SHRI KV NO. 2 PORT BLAIR |
| GRADE:8 | CHAPTER NAME: Fractions in Disguise |
| CONCEPT: Growth and Compounding | GENERAL COMPETENCY FOR MATHEMATICS: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |
| LEARNING INDICATOR: Applies the concept of interest (without compounding) to solve problems in real life context | |

KVS & SAS

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| QUESTION 1 | Sumit maintains a PPF(Public Provident Fund) account in a bank and following are the rules to be followed :<br>• Minimum deposit of Rs. 500 and maximum of Rs. 1,50,000 in a financial year.<br>• Interest rate is 7.1% p.a<br>• Interest on the balance amount shall be credited at the end of each financial year.<br>Sumit has deposited Rs. 1,50,000 as lump sum for the year 2024. The entry of which is shown below in his passbook.<br> <br>How much interest will he receive at the end of the financial year? |
| OPTION A | Rs. 7,02,893 |
| OPTION B | Rs. 605.55403 |
| OPTION C | Rs. 6055540.3 |
| OPTION D | Rs. 60555.403 |
| CORRECT OPTION | OPTION D |

| Transaction | Transaction | Description | Credit Amount | Debit Amount | Balance |
|---|---|---|---|---|---|
| 01-Apr-2024 | 52227095.0 | PPF SUBSCRIPTION | 150000.0 | 0.0 | 852893.00 |

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| TEACHER NAME: | SCHOOL NAME:PM SHRI K V Pt Deen Dyal Upadhyay Nagar |

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|---|---|
| Pradeep Kumar Tiwari | |
| GRADE:8 | CHAPTER NAME: 1 Fractions in Disguise |
| CONCEPT: Growth and Compounding | GENERAL MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |
| LEARNING INDICATOR: Applies the concept of compounding to solve problems in real life context | |

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| QUESTION 2 | Mohan deposited ₹10,000 in a savings account at ABC Bank for 2 years and earned ₹2,000 as simple interest during this period. He now invests the same amount in a fixed deposit for 2 years at the same rate of interest, but with annual compounding. What amount will Mohan receive at the end of 2 years from the fixed deposit? |
| OPTION A | Rs 12000 |
| OPTION B | Rs 11000 |
| OPTION C | Rs 12100 |
| OPTION D | Rs 10201 |
| CORRECT OPTION | OPTION C |

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| ASSESSMENT WRITER: TEAM_SAS | |
| GRADE: 8 | CHAPTER NAME: Fractions in Disguise |

KVS @SAS

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|---|---|
| CONCEPT: Percentage change and Taxes | CBSE MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-1.5 Explores the idea of percentage and applies it to solve problems | |
| LEARNING INDICATOR: Applies the concept of profit/loss/discount to solve problems in real life context | |

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| QUESTION 3 | Aakriti had been waiting for the Republic Day Sale on her favorite online shopping platform to purchase a stylish dress. The dress was listed at ₹600, and during the sale, the website offered a 30% discount on it. She had placed the order.<br>When the dress arrived, it did not fit her properly. She chose to return it, the website charges a convenience fee of ₹20 for every return.<br>What is the final refund amount she received after the deduction of the convenience fee? |
| OPTION A | ₹400 |
| OPTION B | ₹420 |
| OPTION C | ₹440 |
| OPTION D | ₹550 |
| CORRECT OPTION | Option A |

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| TEACHER NAME: Pradeep Kumar Tiwari | SCHOOL NAME: PM SHRI K V Pt Deen Dyal Upadhyay Nagar |
| GRADE:8 | CHAPTER NAME: Fractions in Disguise |

KVS & SAS

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|---|---|
| CONCEPT: Growth and Compounding | GENERAL MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |
| LEARNING INDICATOR: Applies the concept of compounding to solve problems in real life context | |

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| QUESTION 4 | While doing research, Anshul noticed that the population growth of the city XFJ grew 10% in the first year and 5% in the second and third year. The initial population of the city was 100000.<br>What will be the population after the third year? |
| OPTION A | 121275 |
| OPTION B | 120000 |
| OPTION C | 247500 |
| OPTION D | 111000 |
| CORRECT OPTION | OPTION A |

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| TEACHER NAME: AMIT KUMAR | SCHOOL NAME: PM SHRI KV NO.2 GAYA |
| GRADE:8 | CHAPTER NAME: Fractions in Disguise |
| CONCEPT: Fractions, Decimals and Percentages | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |

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| NCF COMPETENCY:C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. |
| LEARNING INDICATOR: Applies the concept of percentage to solve real life problems |

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| QUESTION 5 | A student is taking part in a 10 km cyclothon, riding at a constant speed of 16 km/h.<br>By 10:20 a.m., he had completed 60% of the total distance.<br>What time will he finish the race? |
| OPTION A | 10:35 am |
| OPTION B | 10:40 am |
| OPTION C | 10:42:30 am |
| OPTION D | 10:57:30 am |
| CORRECT OPTION | OPTION A |

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|---|---|
| TEACHER NAME: AMIT KUMAR | SCHOOL NAME: PM SHRI KV NO.2 GAYA |
| GRADE:8 | CHAPTER NAME: Fractions in Disguise |
| CONCEPT: Fractions, Decimals and Percentages | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |

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| LEARNING INDICATOR: Applies the concept of percentage to solve real life problems |

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| QUESTION 6 | A grocery shop owner has 500 items to sell on Sunday. Each item is priced at ₹100. To boost evening sales, he announces a discount on 200 items while selling the remaining 300 items at the original price.<br>At the end of the day, his total sales amount to ₹40,000.<br><br>What is the discount percentage on each discounted item? |
| OPTION A | 20% |
| OPTION B | 25% |
| OPTION C | 50% |
| OPTION D | 75% |
| CORRECT OPTION | OPTION C |

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| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Fractions in Disguise |
| CONCEPT: Percentage change and Taxes | GENERAL MATHEMATICAL COMPETENCY: C3- Interpreting, applying and evaluating mathematical outcomes |
| NCF COMPETENCY: C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |

KVS & SAS

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| LEARNING INDICATOR: Analyse the variation in price of a commodity/service with change in discount percentage |

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| QUESTION 7 | A jacket is sold for ₹2,000.<br>• At the brand outlet sale, the jacket has a 20% discount.<br>• At the brand factory sale, the jacket has a 30% discount.<br>How much less money does a customer pay if they buy the jacket at the factory sale compared to the outlet sale? |
| OPTION A | ₹100 |
| OPTION B | ₹200 |
| OPTION C | ₹300 |
| OPTION D | ₹400 |
| CORRECT OPTION | OPTION B |

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| TEACHER NAME: JYOTI AGARWAL | SCHOOL NAME: PM SHRI K V MALLESWARAM SHIFT-1 BENGALURU |
| GRADE:8 | CHAPTER NAME: Fractions in Disguise |
| CONCEPT:Growth and Compounding | GENERAL COMPETENCY FOR MATHEMATICS:C3- Interpreting, applying and evaluating mathematical outcomes |
| NCF COMPETENCY:C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |

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| LEARNING INDICATOR: Analyse the variation in interests (with or without compounding) when principal, rate of interest and time duration changes |
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| QUESTION 8 | Ananya's grandfather wants to give her a tab ₹30,000 on her birthday. He wants to choose a plan in which he has to pay the least amount of interest. He compares the following four repayment plans:<br><br>**Plans with ₹10,000 Down Payment**(Interest charged on ₹20,000)<br>Plan A: Simple Interest at 6% per annum for 3 years<br>Plan B: Simple Interest at 4% per annum, for 4 years<br><br>**Plans with NO Down Payment**(Interest charged on ₹30,000)<br>Plan C: Simple interest at 3% per annum for 2 years.<br>Plan D: Simple Interest at 2% for 4 years<br><br>Which plan should the grandfather choose? |
| OPTION A | Plan A |
| OPTION B | Plan B |
| OPTION C | Plan C |
| OPTION D | Plan D |
| CORRECT OPTION | OPTION C |

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|---|---|
| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Fractions in Disguise |
| CONCEPT: Percentage change and Taxes | GENERAL MATHEMATICAL COMPETENCY: C3- Interpreting, applying and evaluating mathematical outcomes |
| NCF COMPETENCY: C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |
| LEARNING INDICATOR: Analyse the variation in price of a commodity/service with change in discount percentage | |

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| QUESTION 9 | A shoe store has a 'Buy More, Save More' offer. 1 pair of shoes has a 10% discount, but 2 pairs have a 25% discount. The cost of 1 pair is ₹100.<br>How much more does a customer pay for 2 pairs compared to just buying 1 pair? |
| OPTION A | ₹ 150 |
| OPTION B | ₹ 90 |
| OPTION C | ₹ 60 |
| OPTION D | ₹ 50 |
| CORRECT OPTION | OPTION C |

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| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: The Baudhayana-Pythagoras Theorem |
| CONCEPT:Baudhāyana's-Pythagoras Theorem | GENERAL COMPETENCY FOR MATHEMATICS: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-4.2 Learns the Baudhayana-Pythagoras theorem on the lengths of the sides of a right-angled triangle, and discovers a geometric proof using areas of squares erected on the sides of the triangle, and other related geometric constructions from the Sulba-Sutras | |
| LEARNING INDICATOR: Applies the property of the hypotenuse of an isosceles right-angled triangle to solve problems | |

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| QUESTION 10 | A school has a square herbal garden with each side measuring 10 m. To make walking easier, the gardener plans to build a straight stone path joining two opposite corners of the garden as shown below.<br><br>What will be the length of the stone path? |
| OPTION A | $2\sqrt{5}$ m |
| OPTION B | $4\sqrt{5}$ m |
| OPTION C | $10\sqrt{2}$m |
| OPTION D | $20\sqrt{2}$ m |
| CORRECT OPTION | OPTION C |

KVS & SAS

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|---|---|
| TEACHER NAME: NARENDRA KUMAR MEENA | SCHOOL NAME: PM SHRI KV AFS NALIYA M SHRI KV AFS Naliya |
| GRADE:8 | CHAPTER NAME: The Baudhayana-Pythagoras Theorem |
| CONCEPT: Baudhāyana - Pythagoras triples | GENERAL MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-4.2 Learns the Baudhayana-Pythagoras theorem on the lengths of the sides of a right-angled triangle, and discovers a geometric proof using areas of squares erected on the sides of the triangle, and other related geometric constructions from the Sulba-Sutras | |
| LEARNING INDICATOR: Uses Baudhāyana's triples to solve problems involving right-angled triangles. | |

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| QUESTION 11 | A multi-storey school building plans to buy an emergency retractable ladder for fire drills. For the safety of the students, the base of the ladder should be kept 6 metres away from the wall, and it must reach a window 8 metres above the ground.<br>What should be the length of the ladder? |
| OPTION A | $2\sqrt{7}$ m |
| OPTION B | $7\sqrt{2}$m |
| OPTION C | 10 m |
| OPTION D | 100 m |
| CORRECT OPTION | OPTION C |

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| TEACHER NAME: Y V L N S SARMA | SCHOOL NAME: P M SHRI KV AFS BEGUMPET HYDERABAD |
| GRADE:8 | CHAPTER NAME: The Baudhayana-Pythagoras Theorem |
| CONCEPT:Baudhāyana's-Pythagoras Theorem | GENERAL COMPETENCY FOR MATHEMATICS: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-4.2 Learns the Baudhayana-Pythagoras theorem on the lengths of the sides of a right-angled triangle, and discovers a geometric proof using areas of squares erected on the sides of the triangle, and other related geometric constructions from the Sulba-Sutras | |
| LEARNING INDICATOR: Applies the property of the hypotenuse of an isosceles right-angled triangle to solve problems | |

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| QUESTION 12 | The length of the side of the playing area of a carrom board shown below is 74 cm.<br> <br>A player strikes the striker from the bottom-left corner of the board to the top-right corner pocket.<br>What is the distance covered by the striker across the board? |
| OPTION A | 74 cm |

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| OPTION B | 74 √2 cm |
| OPTION C | 148 cm |
| OPTION D | 148√2 cm |
| CORRECT OPTION | Option B |

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| TEACHER NAME: PRADIP INGLE | SCHOOL NAME:PM SHRI KENDRIYA VIDYALAYA AMBARNATH SHIFT-1 |
| GRADE:8 | CHAPTER NAME:The Baudhayana-Pythagoras Theorem |
| CONCEPT:Baudhāyana's-Pythagoras Theorem | GENERAL MATHEMATICAL COMPETENCY:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.2 Learns the Baudhayana-Pythagoras theorem on the lengths of the sides of a right-angled triangle, and discovers a geometric proof using areas of squares erected on the sides of the triangle, and other related geometric constructions from the Sulba-Sutras | |
| LEARNING INDICATOR: Applies Baudhāyana's Theorem to solve problems involving right-angled triangles. | |

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| QUESTION 13 | After heavy rain and a storm, a tree gets partially broken. Workers from the Municipal Corporation arrive to remove the broken part. To reach it, they place a ladder against the tree as shown in the figure below.<br> <br><br>What is the length of the ladder used by the worker? |
| OPTION A | 12 feet |
| OPTION B | 18 feet |
| OPTION C | 20 feet |
| OPTION D | 28 feet |

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| CORRECT OPTION | OPTION C |

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| ASSESSMENT WRITER: TEAM_SAS | |
| GRADE: 8 | CHAPTER NAME: The Baudhayana-Pythagoras Theorem |
| CONCEPT: Baudhāyana's- Pythagoras Theorem | CBSE MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-4.2 Learns the Baudhayana-Pythagoras theorem on the lengths of the sides of a right-angled triangle, and discovers a geometric proof using areas of squares erected on the sides of the triangle, and other related geometric constructions from the Sulba-Sutras | |
| LEARNING INDICATOR: Applies Baudhāyana's Theorem to solve problems involving right-angled triangles. | |

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| QUESTION 14 | A tourist camp organiser uses the tent shown in the figure. |

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| | The supporting stick placed vertically inside the tent is damaged and needs to be replaced.<br>Which length of stick should be chosen to hold the tent firmly? |
| OPTION A | 4 m |
| OPTION B | 5.5 m |
| OPTION C | 6.5 m |
| OPTION D | 7.5 m |
| CORRECT OPTION | Option B |

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| TEACHER NAME: AMIT GARG | SCHOOL NAME: PM SHRI KV NO.2 JLA BAREILLY |
| GRADE:8 | CHAPTER NAME:The Baudhayana-Pythagoras Theorem |
| CONCEPT:Baudhāyana's-Pythagoras Theorem | GENERAL MATHEMATICAL COMPETENCY:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.2 Learns the Baudhayana-Pythagoras theorem on the lengths of the sides of a right-angled triangle, and discovers a geometric proof using areas of squares erected on the sides of the triangle, and other related geometric constructions from the Sulba-Sutras | |
| LEARNING INDICATOR: Applies Baudhāyana's Theorem to solve problems involving right-angled triangles. | |

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| QUESTION 15 | A firefighter has a ladder of length 10 m to rescue a cat stuck at a window of a building.<br>The window is at a height of 6 m from the ground.<br><br>What distance from the wall should the firefighter place the foot of the ladder so that it reaches the window safely? |
| OPTION A | $2\sqrt{7}$ m |
| OPTION B | $4\sqrt{2}$ m |
| OPTION C | 8 m |
| OPTION D | 10 m |
| CORRECT OPTION | OPTION C |

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|---|---|
| TEACHER NAME: Sumit Bhardwaj | SCHOOL NAME: PM SHRI KV NO. 2 PORT BLAIR |
| GRADE:8 | CHAPTER NAME: Proportional Reasoning-2 |
| CONCEPT:Inverse proportion | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-1.6 Explores and applies fractions (both as ratios and in decimal form) in daily life situations. | |
| LEARNING INDICATOR: Applies the concept of inverse proportionality to solve problem in real life context | |

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| QUESTION 16 | Pratham started practising mock tests for his Government job exam. He takes 2 minutes per question to solve 60 MCQs. But after practicing for many days, he increased the number of questions to 100.<br><br>How does the time per question change for him ? |
| OPTION A | Decreased by 48 second |
| OPTION B | Increased by 48 second |
| OPTION C | Decreased by 0.8 second |
| OPTION D | Increased by 0.8 second |
| CORRECT OPTION | OPTION A |

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| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: Exploring some geometric themes |
| CONCEPT:Fractals | GENERAL COMPETENCY FOR MATHEMATICS :C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-4.4 Develops familiarity with the notion of fractal and identifies and appreciates the appearances of fractals in nature and art in India and around the world | |
| LEARNING INDICATOR: Finds the number of holes/area at nth step in sierpinski carpet/gasket | |

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| QUESTION 17 | A temple floor designer uses triangular patterns. At every step, the middle triangle is removed to form a Sierpinski gasket as shown below.<br> <br>Step 0 Step 1 Step 2<br>How many triangular holes will be formed after 3 steps? |
| OPTION A | 13 |
| OPTION B | 27 |
| OPTION C | 40 |
| OPTION D | 81 |
| CORRECT OPTION | OPTION A |

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|---|---|
| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Exploring some geometric themes |
| CONCEPT:Visualising Solids | GENERAL MATHEMATICAL COMPETENCY:C1- Formulating situations mathematically |
| NCF COMPETENCY:C-3.3 Identifies attributes of three-dimensional shapes (cubes, parallelepipeds, cylinders, cones), works hands-on with material to construct these shapes, and also uses two-dimensional representations of three-dimensional objects to visualise and solve problems | |
| LEARNING INDICATOR: Identifies shapes from different viewpoints | |

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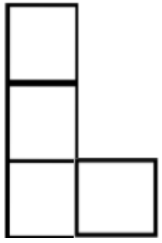
| QUESTION 18 | Amit builds a structure using blocks, as shown below.<br> <br>What is the top view of this structure? |
| OPTION A |  |

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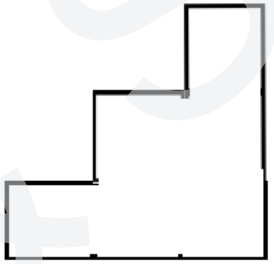
| OPTION B | |
| OPTION C | |
| OPTION D |  |
| CORRECT OPTION | OPTION B |

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|---|---|
| TEACHER NAME: Sumit Bhardwaj | SCHOOL NAME: PM SHRI KV NO. 2 PORT BLAIR |
| GRADE:8 | CHAPTER NAME:Exploring some geometric themes |
| CONCEPT:Fractals | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.4 Develops familiarity with the notion of fractal and identifies and appreciates the appearances of fractals in nature and art in India and around the world | |
| LEARNING INDICATOR: Represents the fractal at the nth step of its shape sequence. | |

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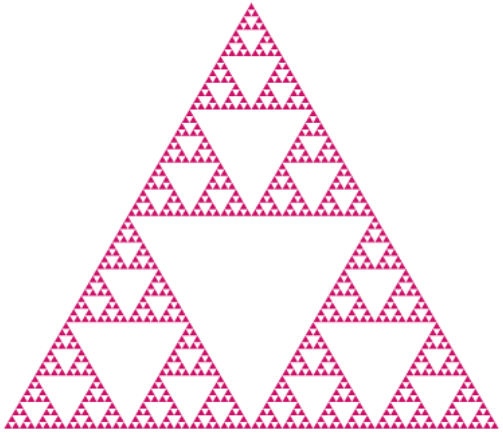
| QUESTION 19 | An interior designer wants to decorate a wall with Stage 5 of the Sierpinski triangle.<br>Which of the following triangles will the designer use? |
| OPTION A |  |

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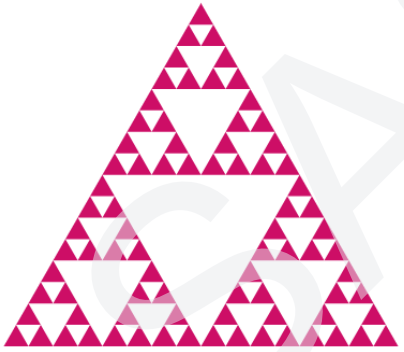
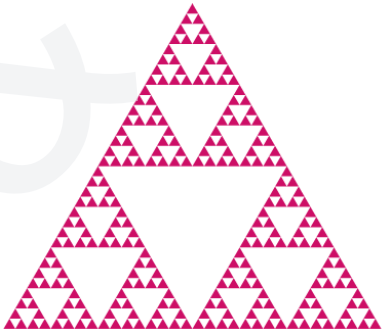
| OPTION B |  |
| OPTION C |  |
| OPTION D | |

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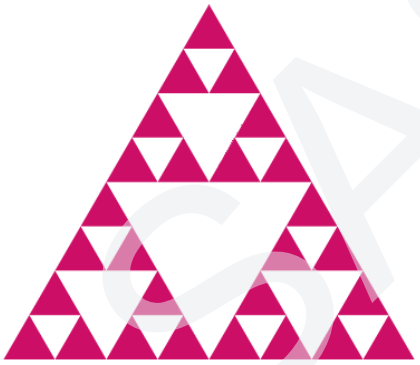
| |  |
| CORRECT OPTION | OPTION C |

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|---|---|
| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Balancing mean and median | GENERAL COMPETENCY FOR MATHEMATICS :C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Calculates the value of new mean based on the changes in data of given data set | |

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<table>
<tr><td>QUESTION 20</td><td>Rohit tracks his daily walking steps using the Google Fit app to improve his fitness.<br>For 5 consecutive days, his step counts are shown below:<br><table><tr><th>Day</th><th>STEPS</th></tr><tr><td>DAY 1</td><td>6000</td></tr><tr><td>DAY 2</td><td>6500</td></tr><tr><td>DAY 3</td><td>7000</td></tr><tr><td>DAY 4</td><td>7500</td></tr><tr><td>Day 5</td><td>8000</td></tr></table><br>He found that mean of the 5 days is 7000 steps<br>On the 6th day , Rohit joins a marathon practice and walks 13,000 steps.<br>What is the new average (mean) number of steps for all 6 days?</td></tr>
<tr><td>OPTION A</td><td>5833</td></tr>
<tr><td>OPTION B</td><td>7000</td></tr>
<tr><td>OPTION C</td><td>8000</td></tr>
</table>

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| OPTION D | 9600 |
| CORRECT OPTION | OPTION C |

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|---|---|
| TEACHER NAME: NARENDRA KUMAR MEENA | SCHOOL NAME: PM SHRI KV AFS NALIYA M SHRI KV AFS Naliya |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Balancing mean and median | GENERAL COMPETENCY FOR MATHEMATICS: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Finds the value of missing data point using given mean | |

QUESTION 21

The school canteen manager records the number of sandwiches sold each day to help plan ingredients and reduce food waste. However, during a week, one day's data was missing due to a recording error as shown below:

| **Day of the Week** | **1st** | **2nd** | **3rd** | **4th** | **5th** | **6th** | **7th** |
|---|---|---|---|---|---|---|---|
| Sandwiches Sold | 18 | 20 | 22 | ___ | 24 | 26 | 30 |

| | |
|---|---|
| | After reviewing the weekly report, the manager found that the average number of sandwiches sold per day was 24. How many sandwiches are sold on the 4th day of week? |
| OPTION A | 22 |
| OPTION B | 24 |
| OPTION C | 26 |
| OPTION D | 28 |
| CORRECT OPTION | OPTION C |

| | |
|---|---|
| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Mean and Median with Frequencies | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Finds the mean for data with frequency | |

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<table>
<tr><td>QUESTION 22</td><td>During online classes, Mrs. Sharma records the number of students attending her Mathematics class each day for 10 days using the attendance feature of the app.<br><br><table><tr><th>No. of students present</th><th>Frequency(no. of days)</th></tr><tr><td>30</td><td>2</td></tr><tr><td>35</td><td>4</td></tr><tr><td>40</td><td>3</td></tr><tr><td>40</td><td>1</td></tr></table><br>What is the mean number of students attending the online class per day?</td></tr>
<tr><td>OPTION A</td><td>36.25</td></tr>
<tr><td>OPTION B</td><td>36</td></tr>
<tr><td>OPTION C</td><td>37.5</td></tr>
<tr><td>OPTION D</td><td>40</td></tr>
<tr><td>CORRECT OPTION</td><td>OPTION B</td></tr>
</table>

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|---|---|
| TEACHER NAME:<br>Pradeep Kumar Tiwari | SCHOOL NAME: PM SHRI K V Pt Deen Dyal Upadhyay Nagar |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Balancing mean and median | GENERAL COMPETENCY FOR MATHEMATICS :C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Calculates the value of new mean based on the changes in data of given data set | |

| | |
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| QUESTION 23 | The average daily water consumption of a hostel over 10 days is 2,500 litres. Due to a meter fault, one day's consumption was recorded as 1,800 litres instead of the actual 3,300 litres.<br><br>By how many litres did the average consumption change? |
| OPTION A | Increase by 150 litres |
| OPTION B | Decrease by 150 litres |
| OPTION C | Increase by 1500 litres |
| OPTION D | Decrease by 1500 litres |
| CORRECT OPTION | OPTION A |

| | |
|---|---|
| TEACHER NAME: Y V L N S SARMA | SCHOOL NAME: PM SHRI KV AFS BEGUMPET HYDERABAD |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Mean and Median with Frequencies | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Finds the mean for data with frequency | |

QUESTION 24

In a survey in a colony the number of plants in the kitchen garden of their homes is noted as follows.

| Number of homes | Number of plants |
|---|---|
| 10 | 3 |
| 9 | 4 |
| 8 | 5 |
| 7 | 6 |
| 6 | 7 |
| 5 | 8 |
| 4 | 9 |

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| | 1 \| 10<br><br>What is the mean number of plants in each home? |
| OPTION A | 6.25 |
| OPTION B | 6.5 |
| OPTION C | 5.52 |
| OPTION D | 5.72 |
| CORRECT OPTION | OPTION C |

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|---|---|
| TEACHER NAME:<br>PRADIP INGLE | SCHOOL NAME:PMSHRI KENDRIYA VIDYALAYA AMBARNATH SHIFT-1 |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Balancing mean and median | GENERAL COMPETENCY FOR MATHEMATICS: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Finds the value of missing/incorrect data point using given mean | |

<table>
<tr><td>QUESTION 25</td><td>For the selection of the Ranji Cricket Trophy matches, the selectors calculated the average (mean) score of Sidhant's last four matches. The runs scored by Sidhant are shown below:<br><br><table><tr><th>Match</th><th>Run Scored</th></tr><tr><td>Match-1</td><td>48</td></tr><tr><td>Match-2</td><td>69</td></tr><tr><td>Match-3</td><td>82</td></tr><tr><td>Match-4</td><td>17</td></tr><tr><td>Total Score</td><td>216</td></tr></table><br>As per Selectors calculation, the average was 54. Sidhant objected that his average score should be 63. He pointed out that one score was entered incorrectly, where the digits in the tens and ones places were interchanged.<br>Which of his entries is wrong?</td></tr>
<tr><td>OPTION A</td><td>17</td></tr>
<tr><td>OPTION B</td><td>48</td></tr>
</table>

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| OPTION C | 69 |
| OPTION D | 82 |
| CORRECT OPTION | OPTION B |

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|---|---|
| TEACHER NAME: PRADIP INGLE | SCHOOL NAME: PMSHRI KENDRIYA VIDYALAYA AMBARNATH SHIFT-1 |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Mean and Median with Frequencies | GENERAL MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Finds the median for data with frequency | |

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| QUESTION 26 | During a school health check-up, students were divided into two different groups on two different days as shown below.<br> <br>**ANU AMIT SUMIT**<br> <br>**BINA AMIT SIDHANT SUJATA** |

| | |
|---|---|
| | **GROUP- A** **GROUP- B**<br><br>Amit was present on both days, so his weight appears in both groups.<br>The median weight of group A is 28 kg. What is the weight of sidhant if the median weight of group B is 35 kg? |
| OPTION A | 32 kg |
| OPTION B | 35 kg |
| OPTION C | 42 kg |
| OPTION D | 49 kg |
| CORRECT OPTION | OPTION C |

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| ASSESSMENT WRITER: TEAM_SAS | |
| GRADE: 8 | CHAPTER NAME: Tales by dots and lines |
| CONCEPT: Visualising and Interpreting Data | CBSE MATHEMATICAL COMPETENCY: C3- Interpreting, applying and evaluating mathematical outcomes |
| NCF COMPETENCY: C-5.2 Selects, creates, and uses appropriate graphical representations (e.g., pictographs, bar graphs, histograms, line graphs, and pie charts) of data to make interpretations | |
| LEARNING INDICATOR: Draws conclusion by interpreting the data given in line graphs | |

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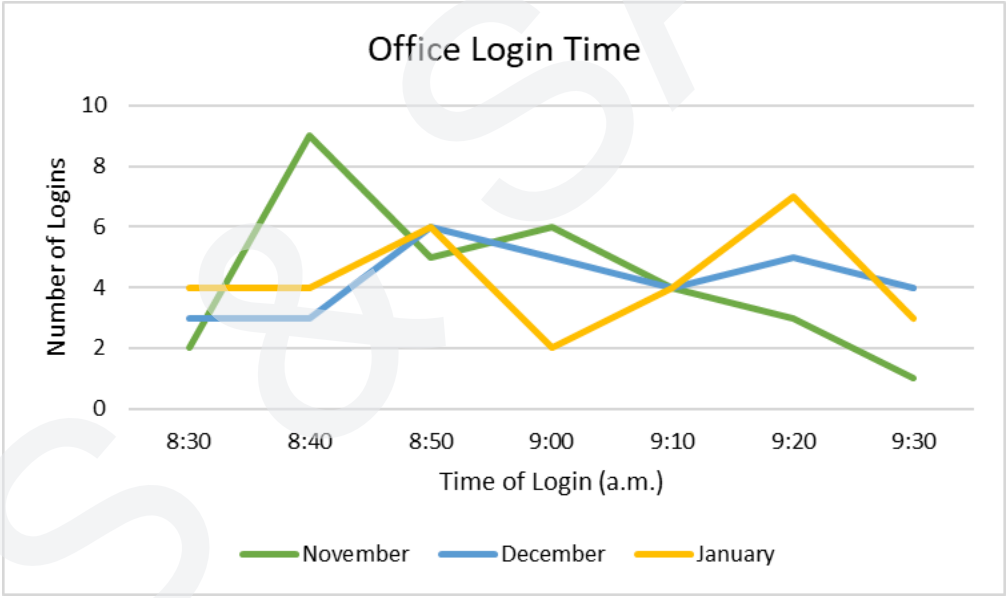
| QUESTION 27 | A firm currently allows employee logins between 8:30 a.m. to 9:30 a.m.<br>The login dashboard shows the login details of 30 employees over the last three months, with time rounded to the nearest 10 minutes.<br>  <br><br>To better align login behaviour, the office plans to revise the morning login window to 30 minutes.<br>Which revised morning login timing range is the most preferred based on the given data? |
| OPTION A | 8:30 a.m. to 9:00 a.m. |
| OPTION B | 8:40 a.m. to 9:10 a.m. |
| OPTION C | 8:50 a.m. to 9:20 a.m. |

| | |
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| OPTION D | 9:00 a.m. to 9:30 a.m. |
| CORRECT OPTION | Option B |

| | |
|---|---|
| TEACHER NAME: AMIT KUMAR | SCHOOL NAME: PM SHRI KV NO.2 GAYA |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Mean and Median with Frequencies | GENERAL MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |
| LEARNING INDICATOR: Finds the median for data with frequency | |

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| QUESTION 28 | The time taken (in minutes) by 7 students to complete a 4 km marathon is: 12, 15, 10, 22, 18, 14, 13.<br>What is the median time taken by the students? |
| OPTION A | 12 |
| OPTION B | 13 |
| OPTION C | 14 |
| OPTION D | 15 |
| CORRECT OPTION | OPTION C |

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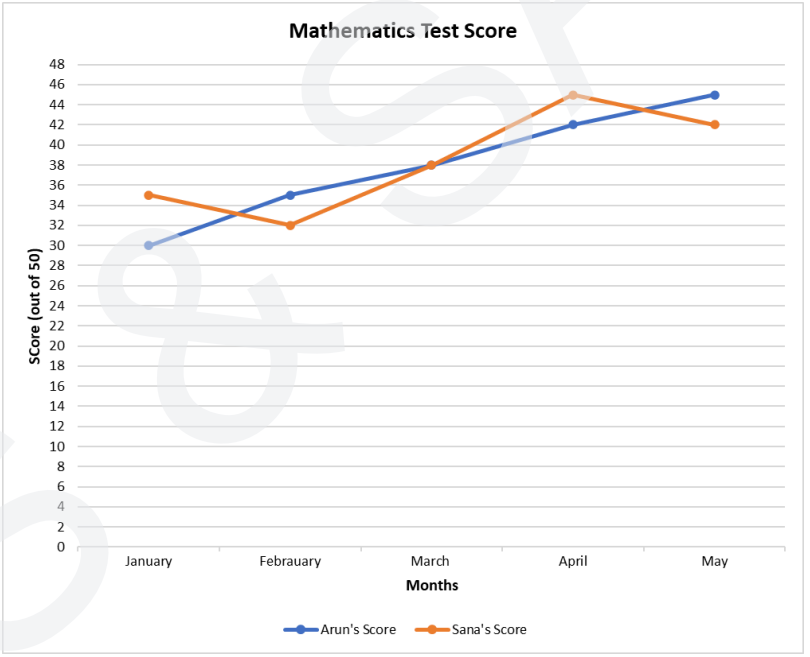
|---|---|
| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Visualising and Interpreting Data | GENERAL MATHEMATICAL COMPETENCY:C1- Formulating situations mathematically |
| NCF COMPETENCY:C-5.2 Selects, creates, and uses appropriate graphical representations (e.g., pictographs, bar graphs, histograms, line graphs, and pie charts) of data to make interpretations | |
| LEARNING INDICATOR: Represents the data in line graph | |

QUESTION 29

Two friends, Arun and Sana, tracked their Mathematics test scores (out of 50 marks) over five months to see who was improving faster. The data they collected is shown below:

| **Months** | **Arun's Score** | **Sana's Score** |
|---|---|---|
| January | 30 | 35 |
| February | 35 | 32 |
| March | 38 | 38 |
| April | 42 | 45 |

| | |
|---|---|
| | <table><tr><td>May</td><td>45</td><td>42</td></tr></table><br>Which of the following is the correct line graph of the above situation? |
| OPTION A |  |

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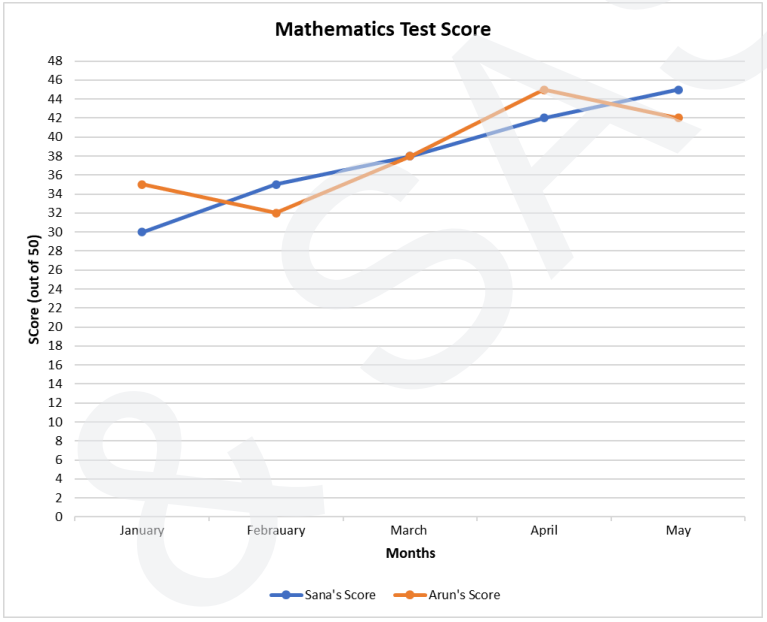
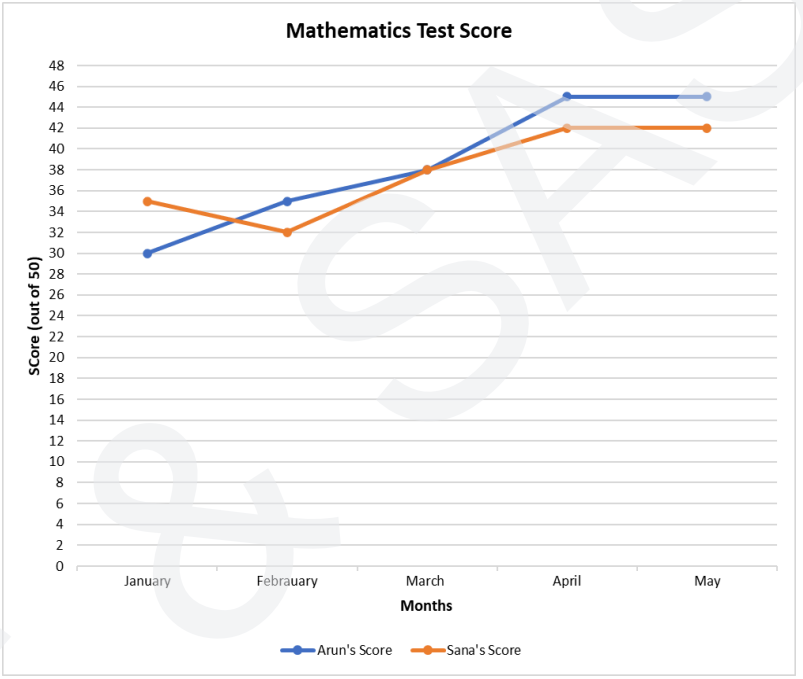
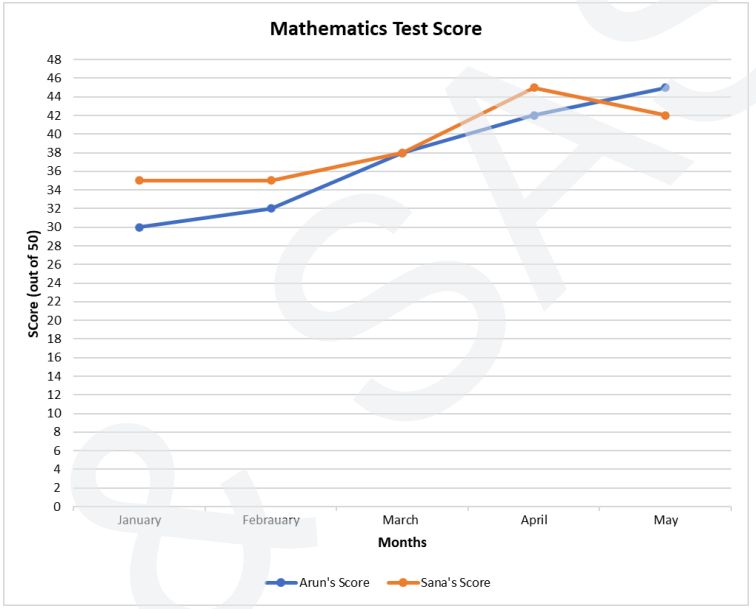
| OPTION B |  |

Mathematics Test Score
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
Score (out of 50)
January
Febrauary
March
April
May
Months
Sana's Score
Arun's Score

| | |
|---|---|
| OPTION C |  |

Mathematics Test Score
SCore (out of 50)
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
January
Febrauary
March
April
May
Months
Arun's Score
Sana's Score

| | |
|---|---|
| OPTION D |  |
| CORRECT OPTION | OPTION A |

| | |
|---|---|
| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Tales by Dots and Lines |
| CONCEPT:Mean and Median with Frequencies | GENERAL MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-5.1 Collects, organises data, and applies measures of central tendencies such as average/mean, mode, and median. | |

| LEARNING INDICATOR: Finds the median for data with frequency |
|---|

| | |
|---|---|
| QUESTION 30 | Dr. Mehta manages the emergency room at a city hospital. To improve patient satisfaction, he analyzed waiting times (in minutes) for 50 patients on a busy Saturday as shown below:<br><br>**Wait Time (minutes)** / **Number of Patients**<br>10 / 8<br>15 / 12<br>20 / 15<br>25 / 10<br>30 / 5<br><br>What is the median waiting time that should be reported to the hospital board? |
| OPTION A | 15 minutes |
| OPTION B | 18 minutes |

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| OPTION C | 20 minutes |
| OPTION D | 25 minutes |
| CORRECT OPTION | OPTION C |

| | |
|---|---|
| TEACHER NAME: NARENDRA KUMAR MEENA | SCHOOL NAME: PM SHRI KV AFS NALIYA M SHRI KV AFS Naliya |
| GRADE:8 | CHAPTER NAME: Algebra Play |
| CONCEPT:Algebraic puzzles | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Determines outcomes of number tricks | |

| | |
|---|---|
| QUESTION 31 | The teacher asks the students to complete a number trick. She writes the puzzle as follows:<br><br>Step 1. Think of a number.<br>Step 2. Multiply it by 7.<br>Step 3. _____ 21.<br>Step 4. Divide the result by 7. |

| | |
|---|---|
| | Step 5. Subtract the original number.<br><br>The answer will always be 3.<br>Which operation will complete the number trick? |
| OPTION A | Subtraction |
| OPTION B | Addition |
| OPTION C | Multiplication |
| OPTION | Division |
| CORRECT OPTION | OPTION B |

| | |
|---|---|
| TEACHER NAME: JYOTI AGARWAL | SCHOOL NAME: PM SHRI K V MALLESWARAM SHIFT-1 BENGALURU |
| GRADE:8 | CHAPTER NAME:Algebra Play |
| CONCEPT: Algebraic puzzles | GENERAL COMPETENCY FOR MATHEMATICS: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Solves number pyramids using algebra | |

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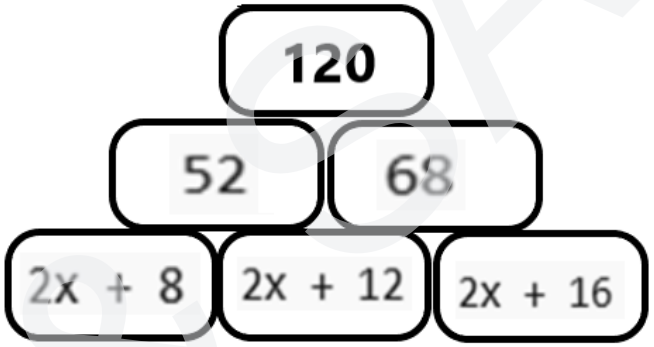
| QUESTION 32 | During a Mathematics Fair, Class VIII students set up a *Number Pyramid* game booth. In the pyramid shown below, each block represents the sum of the two blocks directly below it.<br>  <br><br>Raghav observes that the right block in the middle row is incorrect, which in turn leads to an incorrect value in the top block.<br>What should be the correct value of the right middle block ? |
| OPTION A | 8 |
| OPTION B | 18 |
| OPTION C | 60 |
| OPTION D | 100 |
| CORRECT OPTION | OPTION C |

| | |
|---|---|
| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: Algebra Play |
| CONCEPT: Algebraic puzzles | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Determines outcomes of number tricks | |

| | |
|---|---|
| QUESTION 33 | The Mountain Ascent Day-by-Day Journey Analysis of a climber is given below.<br>• Day 1: He reaches a point that is 200m less than half the mountain's height(x).<br>• Day 2: He starts from Point 1 and covers 200m more.<br>• Day 3: He starts from the halfway mark and covers a distance equal to one-fifth (⅕)x of the total mountain height.<br>The climber is moving steadily toward the summit, but has not reached it yet. By the end of Day 3, he reached a total height of 1,400 meters.<br>What is the total height (x) of the mountain? |
| OPTION A | 1400 m |
| OPTION B | 1800 m |
| OPTION C | 2000 m |

| | |
|---|---|
| OPTION D | 2200 m |
| CORRECT OPTION | OPTION C |

| | |
|---|---|
| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: Algebra Play |
| CONCEPT:Algebraic reasoning | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Applies divisibility tricks to solve mathematical problems | |

| | |
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| QUESTION 334 | An online payment platform uses a 6-digit transaction code for security purposes. The system automatically flags valid transactions if the code is divisible by 9.<br>One customer's transaction code appears as 87x360, where one digit is missing due to a software glitch. The support team must reconstruct the number correctly.<br>What is the value of x? |
| OPTION A | 0 |
| OPTION B | 3 |

| | |
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| OPTION C | 6 |
| OPTION D | 9 |
| CORRECT OPTION | OPTION B |

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|---|---|
| TEACHER NAME: Y V L N S SARMA | SCHOOL NAME: PM SHRI KV AFS BEGUMPET HYDERABAD |
| GRADE:8 | CHAPTER NAME: Algebra Play |
| CONCEPT: Algebraic puzzles | GENERAL COMPETENCY FOR MATHEMATICS : C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Solves number pyramids using algebra | |

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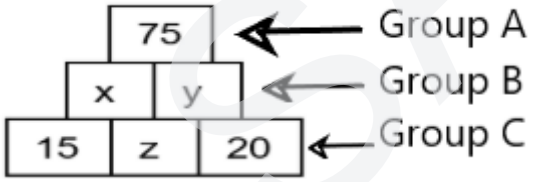
| QUESTION 35 | During a school fund-raising event, the money collected by three groups of students is first written in boxes and then arranged in a number pyramid, as shown below..<br>  <br><br>How much money is collected by Group B and C together? |
| OPTION A | 110 |
| OPTION B | 120 |
| OPTION C | 125 |
| OPTION D | 130 |
| CORRECT OPTION | OPTION D |

| | |
|---|---|
| TEACHER NAME: Y V L N S SARMA | SCHOOL NAME: PM SHRI KV AFS BEGUMPET HYDERABAD |
| GRADE:8 | CHAPTER NAME: Algebra Play |
| CONCEPT:Algebraic | GENERAL COMPETENCY FOR MATHEMATICS : C2 - Employing mathematical concepts, facts, procedures and |

| | |
|---|---|
| reasoning | reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Solves real-life problems using algebraic reasoning | |

| | |
|---|---|
| QUESTION 36 | Hasini and Harman are classmates who brought chocolates to school. Hasini has three times as many chocolates as Harman. Harman suggests that if Hasini gives him 4 chocolates, then both of them will have the same number of chocolates. How many chocolates does Hasini have initially? |
| OPTION A | 4 |
| OPTION B | 6 |
| OPTION C | 8 |
| OPTION D | 12 |
| CORRECT OPTION | OPTION D |

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|---|---|
| TEACHER NAME:AMIT GARG | SCHOOL NAME:PM SHRI KV NO.2 JLA BAREILLY |
| GRADE:8 | CHAPTER NAME: Algebra Play |
| CONCEPT: Algebraic puzzles | GENERAL MATHEMATICAL COMPETENCY:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |

| LEARNING INDICATOR: Decodes unknown numbers in calendar/grids using algebra |
|---|

| | |
|---|---|
| QUESTION 37 | A cut-out of a monthly calendar is shown in the figure where **a** represents the top left date.<br> <br>The sum of all the four dates is 66. The bottom-right date represents the third Sunday of the month.<br>What is the date of the first Sunday of the month? |
| OPTION A | 7 |
| OPTION B | 12 |
| OPTION C | 21 |
| OPTION D | 28 |

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| CORRECT OPTION | OPTION A |

| | |
|---|---|
| ASSESSMENT WRITER: TEAM_SAS | |
| GRADE: 8 | CHAPTER NAME: Algebra Play |
| CONCEPT: Algebraic Reasoning | GENERAL MATHEMATICAL COMPETENCY:C2- Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Finds the largest possible product by arranging given digits | |

| | |
|---|---|
| QUESTION 38 | Nakul created a bag-lock password of 520 using the digits 5, 6, and 8, each used only once.<br>He first formed a two-digit number using any two of the digits and then multiplied it by the remaining digit.<br>How did he reach the password as 520? |
| OPTION A | It is a product of all three digits |
| OPTION B | It is the largest possible product formed by multiplying a two-digit number with the remaining one-digit number |
| OPTION C | It is the product formed by largest two digit number and one digit number |
| OPTION D | It is the smallest possible product formed by multiplying a two-digit number with the remaining one-digit number |
| CORRECT OPTION | Option B |

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|---|---|
| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Algebra Play |
| CONCEPT:Algebraic reasoning | CBSE MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-2.5 Develops own methods to solve puzzles and problems using algebraic thinking | |
| LEARNING INDICATOR: Decodes unknown numbers in calendar/grids using algebra | |

| | |
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| QUESTION 39 | Ramya has a page of the calendar as shown below:<br> <br><br>She asked her friend Rohit to pick a 2×2 grid from this calendar and add all the four numbers in this grid. Rohit tells the total as 76. |

| | |
|---|---|
| | What is the first number Rohit picked in the 2×2 grid? |
| OPTION A | 4 |
| OPTION B | 15 |
| OPTION C | 16 |
| OPTION D | 76 |
| CORRECT OPTION | OPTION B |

| | |
|---|---|
| TEACHER NAME: NARENDRA KUMAR MEENA | SCHOOL NAME: PM SHRI KV AFS NALIYA M SHRI KV AFS Naliya |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Triangle | GENERAL MATHEMATICAL COMPETENCY: C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the concept of area/perimeter of triangle properties to solve problems related to real life/mathematical context | |

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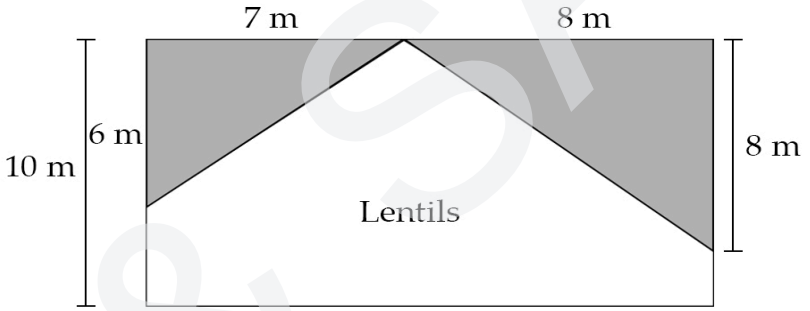
| QUESTION 40 | A farmer has a field and he divided it into three parts. One part for flowers, one for vegetables and the remaining part for lentils.<br>  <br><br>How much area is used for flowers and vegetables? |
| OPTION A | 21 $m^2$ |
| OPTION B | 32 $m^2$ |
| OPTION C | 106 $m^2$ |
| OPTION D | 53 $m^2$ |
| CORRECT OPTION | OPTION D |

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| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Parallelogram, Trapezium and Rhombus | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the dissection to convert one polygon into another to solve real-life or mathematical problems | |

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| QUESTION 41 | In a school, the carpenters are making benches for the classroom. Due to limited space, each bench is designed in the shape of a trapezium — the back side of the bench is slightly wider than the front side so that students sitting behind have more space.<br>To calculate the total area of the bench for buying polish and varnish, the carpenter decides to dissect the trapezium along a height and rearrange it into a rectangle.<br>Dimensions of the trapezium bench:<br>• Longer base = 120 cm<br>• Shorter base = 80 cm<br>• Height = 50 cm |

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| | What is the total area of the bench that will be polished? |
| OPTION A | 2400 sq.m |
| OPTION B | 5000 sq.m |
| OPTION C | 9600 sq.m |
| OPTION D | 10000 sq.m |
| CORRECT OPTION | OPTION B |

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| TEACHER NAME: ALOK ANAND | SCHOOL NAME: PM SHRI KV NMR JNU |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Rectangle and Square | GENERAL COMPETENCY FOR MATHEMATICS : C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the concept of area of rectangle/square to solve problems related to real life/mathematical context | |

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| QUESTION 42 | A school is planning to renovate its rectangular playground. The play ground measures 50 meters in length and 30 meters in width. The principal wants to set aside a small square portion in the centre, measuring 10 meters on each side, as a flower garden. Additionally , there will be a running track of 2 meters wide along the perimeter inside the playground.<br><br>What is the remaining area available for students to play, excluding the garden and running track? |
| OPTION A | 1096 sq.m |
| OPTION B | 1244 sq.m |
| OPTION C | 1296 sq.m |
| OPTION D | 1400 sq.m |
| CORRECT OPTION | OPTION A |

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| TEACHER NAME: Y V L N S SARMA | SCHOOL NAME: PM SHRI KV AFS BEGUMPET HYDERABAD |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Parallelogram, Trapezium and Rhombus | GENERAL COMPETENCY FOR MATHEMATICS:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the dissection to convert one polygon into another to solve real-life or mathematical problems | |

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| QUESTION 43 | The classroom tables used in Classes I and II are designed in the shape as shown below:<br> <br><br>What is the area of the top of the table? |
| OPTION A | 2437 sq. cm |
| OPTION B | 3750 sq. cm |
| OPTION C | 11250 sq. cm |
| OPTION D | 16875 sq. cm |
| CORRECT OPTION | OPTION C |

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| TEACHER NAME: Y V L N S SARMA | SCHOOL NAME: PM SHRI KV AFS BEGUMPET HYDERABAD |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Rectangle and Square | GENERAL COMPETENCY FOR MATHEMATICS : C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the concept of area of rectangle/square to solve problems related to real life/mathematical context | |

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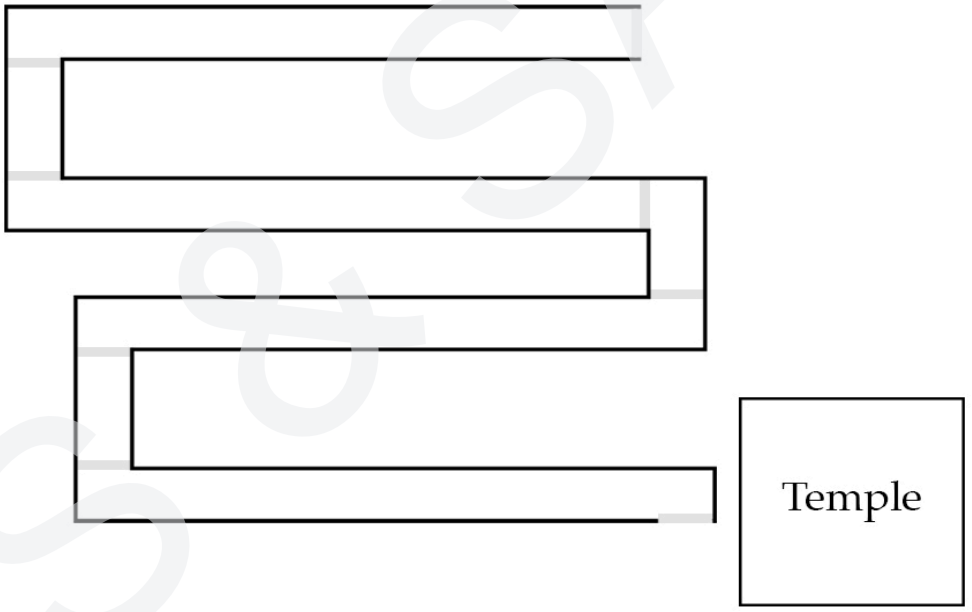
| QUESTION 44 | In a temple, there are queue lines to ensure smooth movement of devotees for the Darshan of the Lord, as shown below:<br>  <br><br>These queue lines are rectangular in shape and have a uniform width of 1.25 m.<br>• The longer queue lines have a length of 20 m.<br>• The shorter queue lines have a length of 2 m.<br>What is the total area of the queue lines through which the devotees move? |

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| OPTION A | 107.5 sq m |
| OPTION B | 102.5 sq m |
| OPTION C | 100 sq m |
| OPTION D | 86 sq m |
| CORRECT OPTION | OPTION A |

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| TEACHER NAME: AMIT GARG | SCHOOL NAME: PM SHRI KV NO.2 JLA BAREILLY |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Parallelogram, Trapezium and Rhombus | GENERAL MATHEMATICAL COMPETENCY:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the concept of the area of parallelogram/rhombus/trapezium in real/mathematical context | |

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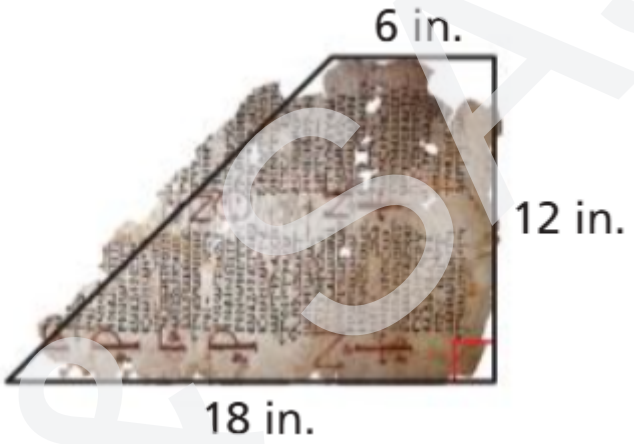
| QUESTION 45 | An archaeologist studies an ancient manuscript fragment, as shown in the figure.<br>  <br><br>She estimates that the manuscript was originally a rectangle with a length of 20 in.<br>Some portion of the manuscript is missing.<br>What is the estimated area of the missing part of the ancient manuscript? |
| OPTION A | 96 sq inches |
| OPTION B | 120 sq inches |
| OPTION C | 144 sq inches |
| OPTION D | 256 sq inches |
| CORRECT OPTION | OPTION A |

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| ASSESSMENT WRITER: TEAM_SAS | |
| GRADE: 8 | CHAPTER NAME: Area |
| CONCEPT:Parallelogram, Trapezium and Rhombus | CBSE MATHEMATICAL COMPETENCY: C - 2. Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY: C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shape | |
| LEARNING INDICATOR: Applies the concept of the area of parallelogram/rhombus/trapezium in real/mathematical context | |

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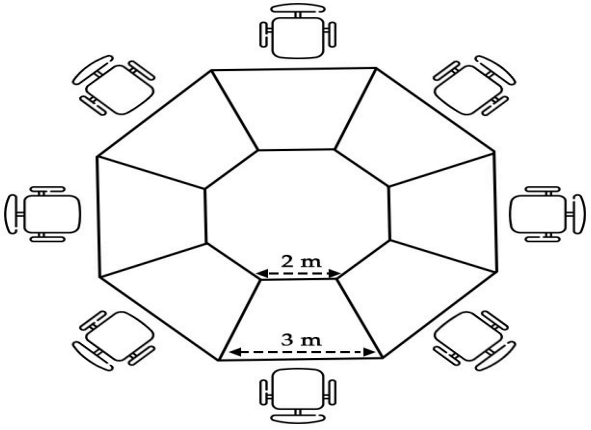
| QUESTION 46 | A carpenter is assigned to make a regular octagonal conference table, as shown in the figure.<br>  <br><br>The tabletop is formed by joining 8 identical trapezium-shaped wooden pieces. |

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| | • Total budget allocated: ₹4,52,000<br>• Cost of woodwork: ₹12,000 per square metre<br>What should be the width (height) of each trapezium-shaped piece so that the carpenter can make a profit of ₹20,000? |
| OPTION A | 1.50 m |
| OPTION B | 1.60 m |
| OPTION C | 1.80 m |
| OPTION D | 1.88 m |
| CORRECT OPTION | Option C |

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| TEACHER NAME: AMIT KUMAR | SCHOOL NAME: PM SHRI KV NO.2 GAYA |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Rectangle and Square | GENERAL COMPETENCY FOR MATHEMATICS : C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the concept of area of rectangle/square to solve problems related to real life/mathematical context | |

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| QUESTION 47 | A farmer owns an organic rectangular farm that is 350 m long and 280 m wide.<br>To enrich the soil, vermicompost is added at a rate of 1.5 kg for every 20 m² of land.<br>Vermicompost is available in 25 kg bags, each costing ₹800.<br>How much money does the farmer need to spend to buy vermicompost for the entire farm? |
| OPTION A | ₹1,56,800 |
| OPTION B | ₹1,96,000 |
| OPTION C | ₹ 2,35,200 |
| OPTION D | ₹ 2,52,800 |
| CORRECT OPTION | OPTION - C |

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| TEACHER NAME: AMIT KUMAR | SCHOOL NAME: PM SHRI KV NO.2 GAYA |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Parallelogram, Trapezium and Rhombus | GENERAL MATHEMATICAL COMPETENCY:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the concept of the area of parallelogram/rhombus/trapezium in real/mathematical context | |

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| QUESTION 48 | A city shopping mall has a parallelogram-shaped display area for advertisement with a base of 20 m and height of 12 m. They rent this space at ₹150 per square metre per month. An advertiser chooses to pay rent for 6 months in advance and get a 10% discount.<br><br>What is the total amount paid by the advertiser? |
| OPTION A | ₹1,62,000 |
| OPTION B | ₹1,94,400 |
| OPTION C | ₹2,12,400 |
| OPTION D | ₹2,16,000 |
| CORRECT OPTION | OPTION - B |

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| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Rectangle and Square | GENERAL MATHEMATICAL COMPETENCY:C3- Interpreting, applying and evaluating mathematical outcomes |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Analyses the change in the area of the regions with change in its dimensions | |

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| QUESTION 49 | A dog park has a total area of 50,000 sq ft. A square welcome center is located inside the park. Originally, the welcome center has a side of 100 ft as shown below:<br> <br><br>The park management decided to expand the welcome center to a side of 150 ft.<br>Which statement correctly explains how this change affects the area available for dogs to play? |
| OPTION A | Area decreases by 10,000 sq ft |
| OPTION B | Area decreases by 12,500 sq ft |
| OPTION C | Area decreases by 22,500 sq ft |
| OPTION D | Area decreases by 27,500 sq ft |
| CORRECT OPTION | OPTION B |

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| TEACHER NAME: Dr. Mridula Chaturvedi | SCHOOL NAME: PM SHRI KENDRIYA VIDYALAYA RAJNANDGAON |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Parallelogram, Trapezium and Rhombus | CBSE MATHEMATICAL COMPETENCY:C2 - Employing mathematical concepts, facts, procedures and reasoning |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Applies the concept of the area of parallelogram/rhombus/trapezium in real/mathematical context | |

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| QUESTION 50 | A home interior designer is renovating the lobby of an apartment building. To create the design, she wants to use two different shapes of tiles having equal area.<br>• Tile A is shaped like a parallelogram with a base of 18 cm and a height of 8 cm.<br>• Tile B is shaped like a rhombus with a horizontal diagonal measuring 16 cm.<br>• What is the required length of Tile B's vertical diagonal? |
| OPTION A | 8 cm |
| OPTION B | 9 cm |
| OPTION C | 16 cm |
| OPTION D | 18 cm |
| CORRECT OPTION | OPTION D |

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| TEACHER NAME:<br>Pradeep Kumar Tiwari | SCHOOL NAME: PM SHRI K V Pt Deen Dyal Upadhyay Nagar |
| GRADE:8 | CHAPTER NAME: Area |
| CONCEPT:Rectangle and Square | GENERAL MATHEMATICAL COMPETENCY:C3- Interpreting, applying and evaluating mathematical outcomes |
| NCF COMPETENCY:C-4.1 Discovers, understands, and uses formulae to determine the area<br>of a square, triangle, parallelogram, and trapezium and develops strategies to find the areas of composite 2D shapes | |
| LEARNING INDICATOR: Analyses the change in the area of the regions with change in its dimensions | |

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| QUESTION 51 | A rectangular kitchen garden is 10 m long and 6 m wide. The gardener decreases the length by 4 m but keeps the breadth unchanged. By how much will the area decrease in percentage? |
| OPTION A | 60% |
| OPTION B | 40% |
| OPTION C | 24% |
| OPTION D | 4% |
| CORRECT OPTION | OPTION B |