



Summer Fields School

KAILASH COLONY, NEW DELHI-110048

Roll No.										
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A

- Please check that this questionnaire contains **12** printed pages.
- Code A, B or C given on the right hand top corner of the questionnaire should be written on the answer sheet in the space provided.
- Please check that this questionnaire contains **40** questions.

42ND ARYABHATTA INTER-SCHOOL MATHEMATICS COMPETITION – 2025 CLASS - V

Time Allowed: **2 Hours**

Max. Marks: **100**

GENERAL INSTRUCTIONS:

1. Do not write your name on the questionnaire.
 2. Write your roll no. on the questionnaire and the Answer Sheet in the space provided.
 3. All the questions are compulsory.
 4. Read questions carefully; think twice before you write the answer. **No overwriting or cutting is allowed on the Answer Sheet.** Another copy of the questionnaire or answer sheet will not be provided.
 5. Do your rough work in the space provided in the questionnaire.
 6. The questionnaire contains four sections. Section A contains **10** questions of 1mark each, Section B contains **10** questions of 2 mark each, Section C contains **10** questions of 3 marks each and Section D contains **10** questions of 4 marks each. All the questions are Free Response Type Questions.
 7. No working or descriptive answers of any question is to be given. Only the Answers are to be written on the Separate Answer sheet provided to you.
 8. Use Blue or Black pens to write the answer on the Answer Sheet.
 9. Answers should be written clearly in the space provided on the Answer sheet.
 10. Use of calculator is not allowed.
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SECTION-A

Write answers only in the space provided on the answer sheet.

1. Find the sum of all the exterior angles of a regular dodecagon.
2. Name the figure formed by joining the mid points of sides of a rhombus.
3. The sum of two positive integers is equal to 77. If the first number is multiplied by 8 and the second by 6, then the results are equal. Find the larger of the two numbers.
4. The area of a circular field is 9856 cm^2 . If a person crosses the field along the diameter. Find the distance he will travel (in cm).
5. Find the complementary angle of supplementary angle of 130° .

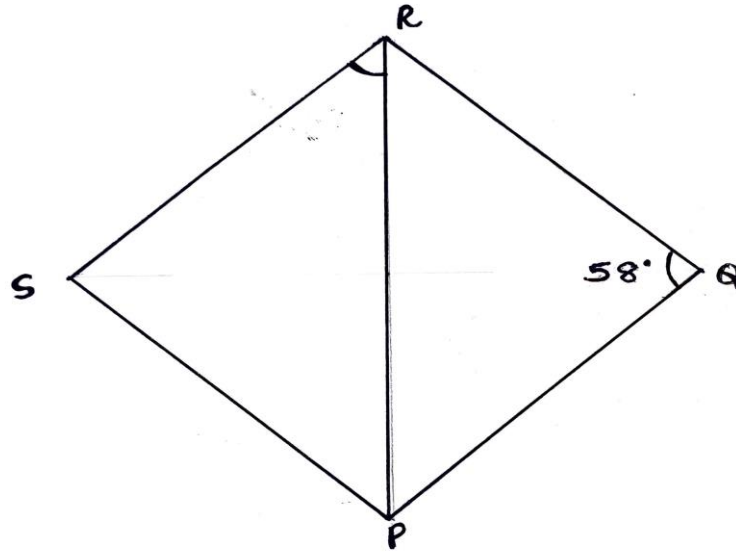
SPACE FOR THE ROUGH WORK

6. The sum of the squares of three consecutive whole numbers is 434. Find the smallest number out of three whole numbers.

7. Solve:

$$0.88 \times \frac{130}{2} + 8.8 \times \frac{130}{5} + 0.088 \times \frac{120}{2}$$

8. Quadrilateral PQRS is a rhombus. If $\angle PQR = 58^\circ$. Find the $\angle PRS$.



9. Each side of a regular polygon is 3.5 cm in length. The perimeter of the polygon is 17.5 cm. How many diagonals does polygon have?

10. The sum of squares of two numbers is 80 and the square of difference between the two numbers is 36. Find the product of two numbers.

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SECTION-B

Write the answers only in the space provided on the answer sheet.

11. If $\angle A$ is 32° more than its complementary angle and $\angle B$ is 20° less than its supplementary angle. Find $(\angle B - \angle A)$.
12. A hall is 15m long and 12 m broad. The sum of the areas of the floor and the ceiling is equal to the sum of the area of the four walls. Find the volume of the hall.(in cubic metres)
13. The average of the two positive numbers is 30 % less than one of the two numbers. By what percent, the average value of the numbers is more than the other number?
14. The sum of the measure of the interior angles of a polygon is 1620° . Find the number of the sides of the polygon.
15. If the denominator of a fraction is increased by 25% and numerator is reduced by 24%, the new fraction thus formed is $\frac{19}{25}$. Find the original fraction.

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16. A clock shows 4:30 a.m. If minute hand points East, in which direction will the hour hand point .
17. Three wheels can complete 60, 30, 36 revolutions per minute. There is a white spot on each wheel that touches the surface initially when wheels are at rest. After how many minutes , all these spots will simultaneously touch the surface again ?
18. Evaluate and answer in Roman Numeral.
 $\text{MMMDCCLVIII} \div \text{MDCCCLXXIX} \times \text{MXCIX} - \text{DCCCXLIX}$
19. What is the sixth term in the number sequence ?
1, 11 , 21 , 1211 , 111221 , ...
20. How many numbers from 1 to 2009 are multiples of 2 but are not divisible by 3 or 5?

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SECTION-C

Write the answers only in the space provided on the answer sheet.

21. Aman saves 40% less than Neha . Karan saves 30% more than Neha . If Karan had ₹ 280 more than Aman , how much money did Neha have in the beginning ?
22. A cuboid has dimensions of $x \text{ cm} \times 1 \text{ cm} \times 2 \text{ cm}$ respectively. The total surface area of the cuboid has a numerical value which is some integral multiple of the numerical value of its volume. What is the minimum possible integral value of 'x' ?
23. Find the number of circular plates of diameter 1 cm be taken out of a square plate of side 4 cm with minimum loss of material.
24. The sum of Jai's age and the age of his mother is 32 years. The sum of the age of his mother and the age of his grandmother is 83 years . How old was Jai's grandmother when Jai was born ?

SPACE FOR THE ROUGH

25. The circumference of the base of a circular cylinder is 14π cm . The height of the cylinder is equal to the diameter of the base . How many litres of water can it hold ? (Use $\pi = \frac{22}{7}$)
- 26 . A one way bus ticket costs ₹ 25 and a two way bus ticket costs ₹ 35. A bus conductor collected ₹ 560 altogether from the sale of 20 tickets. How many one way bus tickets were sold ?
27. A certain number when divided by 1479 , leaves a remainder 51. Find the reminder when the same number is divided by 29 .

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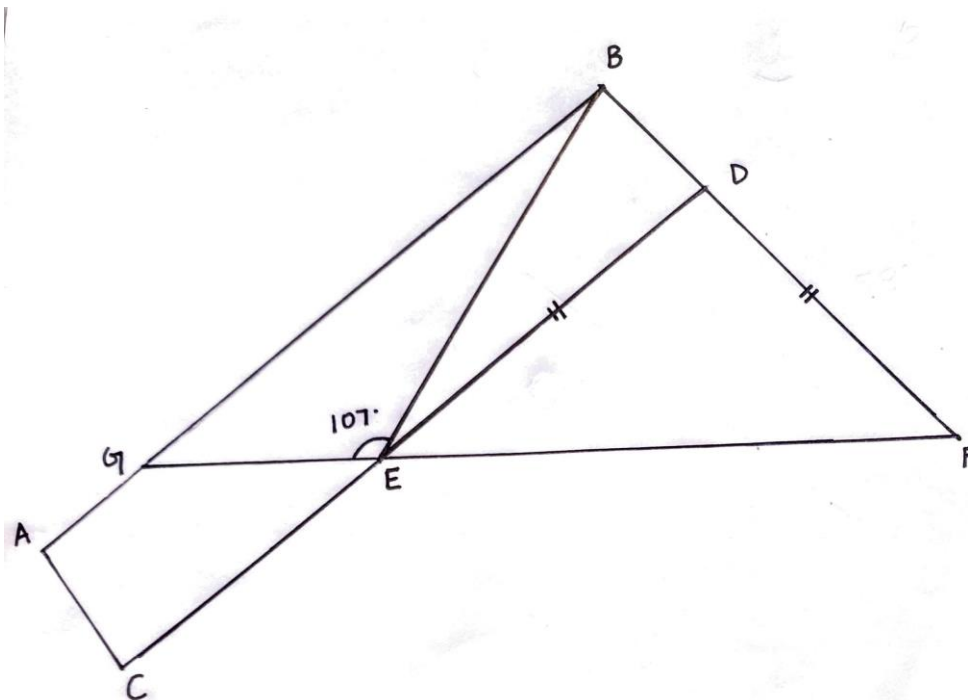
28. The average of 8 numbers is 20. The average of first two numbers is $15\frac{1}{2}$ and that of the next three numbers is $21\frac{1}{3}$. If the sixth number be less than the seventh and eighth numbers by 4 and 7 respectively. Find the eighth number.
29. A watch was sold at a loss of 15%. Had it been sold for ₹ 300 more, the seller would have gained 15% instead. Find the selling price of the watch?
30. The LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, find the other number.

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SECTION-D

Write the Answers only in the space provided on the Answer sheet.

31. In the given figure triangle DEF is an isosceles triangle, where $DE = DF$. ABDC is a rectangle and FE is extended to meet the side BA of rectangle at G, $\angle BEG = 107^\circ$. Find $\angle BGE$.



32. A train travels 50% faster than a car. Both start from point A at the same time and reach point B which is 75 km away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. Find the speed of the car.
33. A box contains a total of 1800 red, blue and green beads. $\frac{1}{5}$ of the beads were green in colour. When Kritika took out 250 red beads and $\frac{3}{7}$ of the blue beads, the remaining blue beads now will be two fifths of the remaining red beads. Find the number of blue beads in the box.

SPACE FOR THE ROUGH WORK

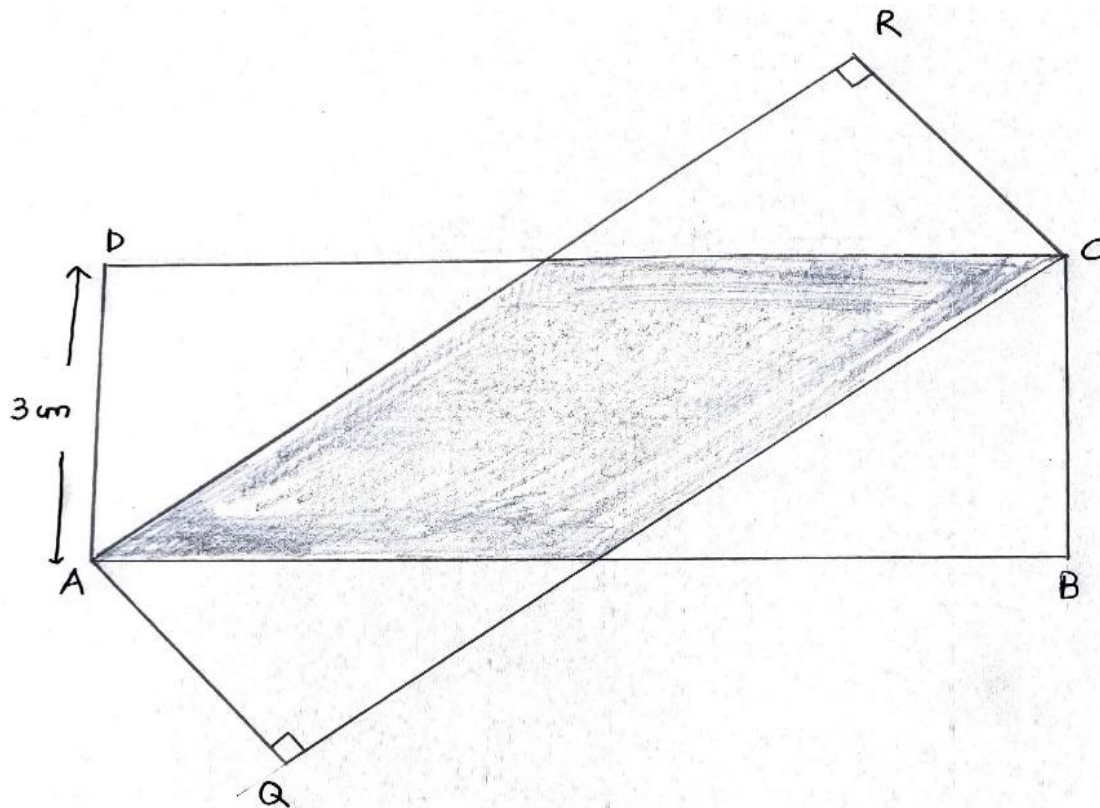
34. A rectangle measures 100 cm by 50 cm . If both the length and breadth of the rectangle are increased by 40% each , what is the total percentage increase in the area of the new rectangle?
35. A metallic cuboid of dimensions 4 cm $\times$ 6 cm $\times$ 8 cm is melted and some more metal is added to make it a cube whose side is an integer. Find the minimum volume of the metal to be added.
36. There were 12 children at a birthday party, whose ages were 16, 17, 18 ,19 or 20 .Out of these four children were 16 years old. The maximum number of children were 18 years old. Find the average age of children .

SPACE FOR THE ROUGH WORK

37. Out of the trousers produced in a factory , 20 % are defective , while 20% of the rest were sold in the local market . If the remaining 1840 are left for export , then find the number of trousers produced in the factory.
38. Ram purchased 240 handwriting books at the rate of ₹ 6 each and sold half of them at the rate of ₹ 4 each, one - third of them at ₹ 5 each and the rest at the cost price. Find the profit or loss percentage.(Write the answer upto 2 places of decimals).

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39. A parcel has to reach its destination by 9 a.m. A postman is assigned to deliver the parcel from the post office . If the postman travels on his scooter at 60 km/hr, he will be late by 15 minutes. If he travels at 72 km/hr, he will arrive at the destination at 8:50 a.m. How far does the postman need to travel in order to deliver the parcel ?
40. ABCD and AQCR are two identical rectangles with one side of length 3 cm overlap each other (as given in the figure) . Find the area of rectangle AQCR , if area of the shaded region is 15 sq cm.



SPACE FOR THE ROUGH WORK
