STUDENT COPY · SET A

Class 8 · Mathematics Olympiad

Total questions	Total marks	Time	Negative marking
50	60	60 minutes	None

Name: _____ Class/Section: _____ Roll no: _____

Each question has four options, of which only one is correct. Mark your answer on the answer sheet. The Achievers Section carries higher marks per question. Your teacher has the answers.
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Logical Reasoning

15 questions · 1 mark each · 15 marks

Q1. Pointing to a boy in a photograph, Rahul said, “This boy is not me, but he is the son of my paternal grandfather’s only son.” How is the boy related to Rahul?

(A) Cousin (B) Uncle (C) Brother (D) Nephew

Q2. A father is 25 years older than his son. The son is 15 years old now. How old will the father be after 5 years?

(A) 40 years (B) 50 years (C) 46 years (D) 45 years

Q3. Anita walks 7 m towards north, turns right and walks 4 m, then turns right again and walks 7 m. How far is Anita from the starting point, and in which direction?

(A) 4 m, West (B) 4 m, East (C) 7 m, East (D) 11 m, North

Q4. Which one does NOT belong with the others?

(A) Triangle (B) Square (C) Pentagon (D) Circle

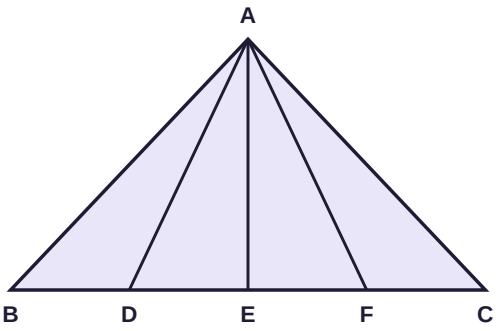
Q5. Find the next number in the pattern: 3, 9, 21, 45, ___

(A) 93 (B) 91 (C) 96 (D) 90

Q6. If the 12th of a month is a Friday, what day of the week is the 28th of the same month?

(A) Saturday (B) Monday (C) Tuesday (D) Sunday

Q7. How many triangles are there in the given figure?



(A) 11 (B) 9 (C) 10 (D) 12

Q8. In a queue, Nita is 10th from the front and 12th from the back. How many people are in the queue altogether?

(A) 22 (B) 21 (C) 20 (D) 23

Q9. Which letter comes next? A, E, I, M, ___

(A) U (B) R (C) Q (D) P

Q10. Which letter comes next? G, I, L, P, ___

(A) V (B) T (C) S (D) U

Q11. If FAN is written as 6 - 1 - 14 using the positions of the letters in the alphabet, how is CAT written?

(A) 3 - 1 - 20 (B) 20 - 1 - 3 (C) 4 - 2 - 21 (D) 24 - 26 - 7

Q12. Which of these figures has exactly 4 lines of symmetry?



(A) (B) (C) (D)

Q13. Read the statements and choose the conclusion that MUST be true.
All squares are rectangles. All rectangles have four sides.

(A) All squares have four sides. (B) All rectangles are squares.

(C) No rectangle is a square. (D) Some squares have three sides.

Q14. Which word would come FIRST in a dictionary?

(A) museum (B) minute (C) mother (D) mango

Q15. In the first row the numbers are 3, 4 and 11. In the second row they are 7, 3 and 20. In the third row they are 3, 6 and ___ . The same rule applies to every row.

(A) 17 (B) 16 (C) 19 (D) 18

Mathematical Reasoning

20 questions · 1 mark each · 20 marks

Q16. In a parallelogram, adjacent angles are (3x + 10)° and (2x + 20)°. What is the larger angle?

(A) 100° (B) 110° (C) 80° (D) 90°

Q17. Which rational number lies strictly between -3/4 and -2/3?

(A) -16/24 (B) -15/24 (C) -17/24 (D) -19/24

Q18. If $p + q = 9$ and $pq = 18$, what is $p^2 + q^2$?

(A) 63 (B) 45 (C) 117 (D) 81

Q19. Which rational number has its reciprocal strictly between -3 and -2?

(A) -1/4 (B) 2/5 (C) -2/5 (D) -5/2

Q20. The diagonals of a rhombus are 16 cm and 30 cm. What is the length of each side?

(A) 23 cm (B) 34 cm (C) 17 cm (D) 46 cm

Q21. What is the value of $(2^3 \times 2^{-5}) \div 2^{-1}$?

(A) 2 (B) 1/2 (C) 1/16 (D) 1/4

Q22. Which number is exactly halfway between -3/4 and 1/2 on the number line?

(A) -1/4 (B) -5/8 (C) -1/8 (D) 1/8

Q23. Factorise completely: $6x^2 - 7x - 3$.

(A) (3x + 1)(2x - 3) (B) (3x - 1)(2x + 3)

(C) (6x + 1)(x - 3) (D) (2x + 1)(3x - 3)

Q24. Five numbers have median 14. If 2 is added to each number, what happens to the median and range?

(A) median +2, range +2 (B) median same, range +2

(C) median same, range same (D) median +2, range same

Q25. A bag marked ₹1200 is sold at 15% discount, then 10% GST is added on the discounted price. What is the bill amount?

(A) ₹1020 (B) ₹1110 (C) ₹1122 (D) ₹1080

Q26. A bag has red, blue and green balls. P(red) = 1/3, P(blue) = 1/4. If there are 5 green balls, how many balls are in the bag?

(A) 24 balls (B) 15 balls (C) 12 balls (D) 20 balls

Q27. A quadrilateral has diagonals equal, perpendicular, and bisect each other. Which is the most specific name for it?

(A) Rhombus (B) Square (C) Rectangle (D) Kite

Q28. 12 workers finish a job in 15 days. After 3 days, 3 workers leave. How many more days are needed at the same rate?

(A) 20 (B) 15 (C) 12 (D) 16

Q29. Which rational number lies strictly between -2/3 and -3/5?

(A) -7/10 (B) -3/4 (C) -1/2 (D) -5/8

Q30. A cylinder and cuboid have height 7 cm. Cylinder radius is 3.5 cm; cuboid base is 11 cm × 7 cm. Using π = 22/7, which volume is larger?

(A) cylinder by 269.5 cm^3 (B) cuboid by 269.5 cm^3

(C) cuboid by 539 cm^3 (D) cylinder by 38.5 cm^3

Q31. What is the least positive integer by which 3087 must be divided to get a perfect cube?

(A) 9 (B) 7 (C) 3 (D) 21

Q32. What is the smallest positive integer by which 1800 must be multiplied to make it a perfect square?

(A) 2 (B) 10 (C) 5 (D) 3

Q33. 12 workers can build a wall in 15 days. After 5 days of work, 4 workers leave. How many more days are needed?

(A) 12 days (B) 10 days (C) 20 days (D) 15 days

Q34. A solid cylinder of radius 7 cm and height 10 cm is melted. At most how many complete cubes of side 7 cm can be made? Use π = 22/7.

(A) 4 (B) 3 (C) 5 (D) 6

Q35. A closed cuboid of size 12 cm × 8 cm × 5 cm is painted on all faces except the bottom. What area is painted?

(A) 392 cm^2 (B) 296 cm^2

(C) 200 cm^2 (D) 480 cm^2

Everyday Mathematics

10 questions · 1 mark each · 10 marks

Q36. Neha had 2½ kg flour. She used ¾ kg for rotis and then bought 11/8 kg more. How much flour does she have now?

(A) 35/8 kg (B) 17/8 kg (C) 27/8 kg (D) 21/8 kg

Q37. A photo of 6.4 MB is compressed to 2^{-3} of its size. What is the new size?

(A) 3.2 MB (B) 0.8 MB (C) 51.2 MB (D) 19.2 MB

Q38. A rectangular notice board has area $x^2+7x+12$ square units. One side is x+3 units. What is the other side?

(A) x−4 units (B) x+7 units (C) x+12 units (D) x+4 units

Q39. Three friends pay ₹280 for a taxi. Anu pays ₹40 more than Bina, and Chetan pays twice Bina. How much does Bina pay?

(A) ₹70 (B) ₹80 (C) ₹60 (D) ₹100

Q40. A jacket marked ₹2000 is sold at 20% discount. Then 5% tax is added on the discounted price. What is the final bill?

(A) ₹1700 (B) ₹1680 (C) ₹1600 (D) ₹1500

Q41. A cylindrical glass has radius 3.5 cm and height 10 cm. Using π=22/7, how much juice does it hold when full?

(A) 110 cm^3 (B) 385 cm^3

(C) 220 cm^3 (D) 770 cm^3

Q42. A taxi charges a fixed ₹40 plus ₹12 per km. Ria paid ₹184 in all. How many kilometres did she travel?

(A) 10 km (B) 16 km (C) 15 km (D) 12 km

Q43. Meera bought 2½ kg rice. She used 3/5 kg and packed the rest equally into 4 jars. How much rice went into each jar?

(A) 19/10 kg (B) 19/6 kg (C) 19/40 kg (D) 29/40 kg

Q44. A square garden has area 2025 m^2. A 3 m gate is left unfenced. How much fencing is needed around the rest?

(A) 174 m (B) 177 m (C) 171 m (D) 180 m

Q45. In a parallelogram-shaped park, one angle is twice its adjacent angle. What is the smaller angle?

(A) 60° (B) 120° (C) 90° (D) 45°

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. A lamp marked ₹2400 is sold at 15% discount. Then 18% GST is charged on the discounted price. What is the bill amount?

(A) ₹2472.00 (B) ₹2832.00 (C) ₹2040.00 (D) ₹2407.20

Q47. A number r is multiplied by -3/5 and then 7/10 is added. The result is 1/2. What is r?

(A) 1/3 (B) -2 (C) 1/5 (D) -1/3

Q48. A bag has marked price ₹2400. A shop gives 15% discount and then adds 10% tax on the discounted price. What is the final bill?

(A) ₹2280 (B) ₹2244 (C) ₹2040 (D) ₹2640

Q49. At 10% p.a. for 2 years, the compound interest on a sum exceeds the simple interest by ₹50. What is the sum?

(A) ₹5500 (B) ₹5000 (C) ₹10000 (D) ₹2500

Q50. If 5/6 − ¾ of a number is −1/3, what is the number?

(A) 3/2 (B) 14/9 (C) 10/9 (D) 2/3

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