

CLASS

8

SAMPLE PAPER



International Mathematics Olympiad

The actual test paper has 50 questions. Time allowed : 60 minutes. There are 3 sections: 20 questions in section I, 20 in section II and 10 in section III.

SYLLABUS

Section – I (Logical Reasoning) : Mathematical operations, Series completion, Direction sense test, Analytical Reasoning, Problems on cubes and dice, Number ranking & Time sequence Test and general reasoning based on prescribed syllabus.

Section – II (Mathematical Reasoning) : Squares and Square Roots, Cubes and cube roots, Exponents and Radicals, Comparing quantities, Algebraic identities, Polynomials, Equations in one Variable, Parallel Lines, Special types of Quadrilaterals and their constructions, Mensuration, Arithmetic Ability, Data handling.

Section – III (Everyday Mathematics) : The Syllabus of this section will be based on the syllabus of Mathematical Reasoning.

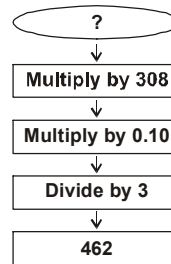


International Mathematics Olympiad

LOGICAL REASONING

1. What is the number you started with?

- (A) 5
- (B) 45
- (C) 56
- (D) 25



2. One term in the number series is wrong. Find out the wrong term.

24, 27, 31, 33, 36

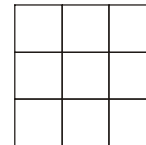
- (A) 24
- (B) 27
- (C) 31
- (D) 33

3. A is 40 m South-west of B. C is 40 m South-East of B. Then C is in which direction of A?

- (A) East
- (B) West
- (C) North-east
- (D) South

4. The maximum number of squares in the following figure is

- (A) 14
- (B) 13
- (C) 10
- (D) 9



5. Standing on a platform, Amit told Sunita that Aligarh was more than ten kilometres but less than fifteen kilometres from there. Sunita knew that it was more than twelve but less than fourteen kilometres from there. If both of them were correct, which of the following could be the distance of Aligarh from the platform?

- (A) 11 km
- (B) 12 km
- (C) 13 km
- (D) 14 km

6. If the day before yesterday was Saturday, what day will fall on the day after tomorrow?

- (A) Friday
- (B) Thursday
- (C) Wednesday
- (D) Tuesday

7. Count the number of cubes in the figure given here.

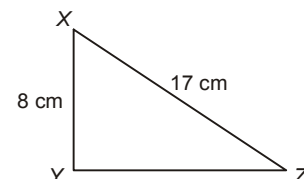
- (A) 14
- (B) 15
- (C) 12
- (D) 20



MATHEMATICAL REASONING

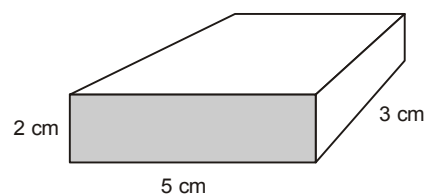
8. What is the length of \overline{YZ} ?

- (A) 9 cm
- (B) 15 cm
- (C) 19 cm
- (D) 25 cm



9. What is the volume of the rectangular solid shown below?

- (A) 10 cubic cm
- (B) 25 cubic cm
- (C) 30 cubic cm
- (D) 62 cubic cm

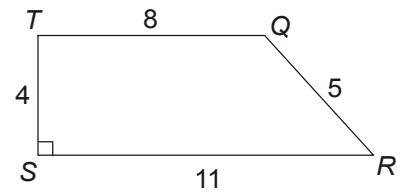


10. What is the value of x if $-3x + 2 = -7$?

- (A) $x = -6$ (B) $x = -3$ (C) $x = 3$ (D) $x = 6$

11. What is the area of trapezoid $QRST$ in square units?

- (A) 22 (B) 27
(C) 38 (D) 48



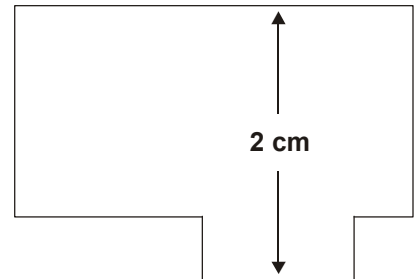
12. Mr. Gupta made a scale drawing of his office.

$$\frac{1}{2} \text{ cm} = 3 \text{ m}$$

The width of the scale drawing of the office is 2 cm.

What is the actual width, in metres, of Mr. Gupta's office?

- (A) 3 (B) 6
(C) 9 (D) 12



13. Which property is used in the equation given below?

$$12(x + 4) = 12x + 48$$

- (A) Associative Property of Addition (B) Commutative Property of Addition
(C) Distributive Property (D) Reflexive Property

14. Which of the following equations illustrates the inverse property of multiplication?

- (A) $5 \times \frac{1}{5} = 1$ (B) $5 \times 1 = 5$ (C) $5 \times 0 = 0$ (D) $5 \times 5 = 25$

15. A right triangle's hypotenuse has length 5 units. If one leg has length 2 units, what is the length of the other leg?

- (A) 3 (B) $\sqrt{21}$ (C) $\sqrt{29}$ (D) 7

16. The sum of a number (n) and 14 is 72. Which equation shows this relationship?

- (A) $14 + n = 72$ (B) $72n = 14$ (C) $14 - n = 72$ (D) $72 + n = 14$

17. Find the value of x

$$\frac{9x+7}{2} - \left[x - \left(\frac{x-2}{7} \right) \right] = 36$$

- (A) 9 (B) 18 (C) 5 (D) 4.

EVERYDAY MATHEMATICS

18. Dennis the Menace is thinking of two numbers. Their greatest common factor is 6. Their least common multiple is 36. One of the numbers is 12. What is the other number?

- (A) 18 (B) 16 (C) 6 (D) 24

19. Farmer Ramu put a square fence around his vegetable garden to keep the deer from eating his corn. One side was 10 m in length. If the posts were placed 2 m apart, how many posts did he use?

- (A) 16 (B) 20 (C) 10 (D) 15

20. Anita passed around a basket of strawberries to the girls at her party. Before the party she ate 5 strawberries and gave a friend 3. Eight girls arrived at the party. The first girl took a strawberry, the second girl took 3 strawberries, the third girl took 5 strawberries and so on. After the last girl took her strawberries, the basket was empty. How many strawberries were there in the basket at the beginning?

- (A) 72 (B) 60 (C) 65 (D) 45

