

CLASS

7

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.

Section I : Logical Reasoning, **Section II** : Mathematical Reasoning & **Section III** : Everyday Mathematics

SYLLABUS

Integers, Properties of integers, Fractions, Multiplication and division of fractions, Representation of rational numbers on number line, Operations of rational numbers, Multiplication and Division of decimals, Conversion of units, Powers and Exponents, Algebraic Expressions, Simple linear equations, Concept of percentage, Profit and Loss, Simple interest, Understanding shapes, Properties of triangle, Symmetry, Congruence of triangles, Perimeter, Area, Volume, Circles, Data handling, Arithmetical ability.

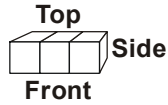
Problems based on figures, Find odd numeral out, Series completion, Coding-decoding, Mathematical reasoning, Mirror images, Embedded figures, Patterns, Direction sense, Number Ranking and Alphabetical test.



International Mathematics Olympiad

LOGICAL REASONING

1. The figure given below is made of 3 small cubes.



Which best shows the side view of the figure?

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

2. Which will come next in the series?

az, by, cx, ?

- (A) ef (B) gh (C) ij (D) dw

3. A and B are a married couple. X and Y are brothers, X is brother of A. How is Y related to B?

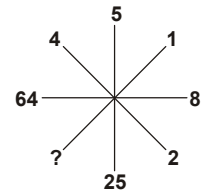
- (A) Brother-in-law (B) Brother (C) Son-in-law (D) Cousin

4. Three of the following are alike in a certain way and form a group. Find the odd one out.

- (A) Bird (B) Insect
(C) Aeroplane (D) Kite

5. Insert the missing character.

- (A) 1 (B) 2
(C) 3 (D) 4



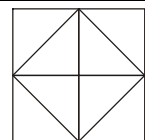
6. Which most closely resembles the mirror image of the given word.

STROKE

- (A) ƆTROƆE (B) EKORTS (C) ROKETS (D) ƆTROƆE

7. Count the number of triangles in the following figure.

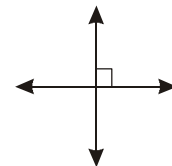
- (A) 8 (B) 10
(C) 12 (D) 14



MATHEMATICAL REASONING

8. Which of the following is best described in the given figure?

- (A) Acute angles (B) Obtuse angles
(C) Parallel lines (D) Perpendicular lines



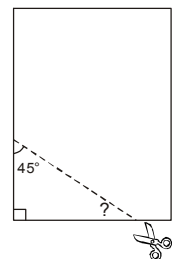
9. Which shows 833,000 written in scientific notation?

- (A) 8.33×10^3 (B) 8.33×10^4
(C) 8.33×10^5 (D) 8.33×10^6

10. Nina made a triangle by cutting the corner of a sheet of paper.

One angle is 45° . What is the measure of the third angle of Nina's triangle?

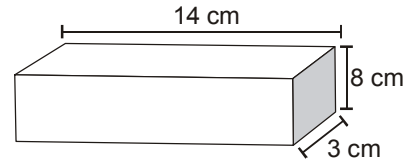
- (A) 30° (B) 45°
(C) 55° (D) 60°



11. $4\frac{3}{4} - 2\frac{1}{2} =$

- (A) $1\frac{1}{4}$ (B) $1\frac{3}{4}$ (C) $2\frac{1}{4}$ (D) $2\frac{3}{4}$

12. This rectangular prism has a length of 14 cm, a height of 8 cm, and a width of 3 cm.



- What is the volume?
 (A) 25 cu cm (B) 42 cu cm
 (C) 112 cu cm (D) 336 cu cm

13. Which expression represents the product of n and 25?

- (A) $25n$ (B) $25 - n$ (C) $25 + n$ (D) $25 \div n$

14. Which point on the number line best represents 1.35?

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

15. What is the prime factorization of 45?

- (A) $2^3 \times 5$ (B) $3^2 \times 5$ (C) $5^2 \times 3$ (D) $5^2 \times 9$

16. $11.3 \times 2.7 =$

- (A) 29.31 (B) 29.51 (C) 30.31 (D) 30.51

17. Which of the following shows the next step using the least common denominator to simplify $\frac{7}{8} - \frac{5}{6}$?

- (A) $\left(\frac{7}{8} \times \frac{3}{3}\right) - \left(\frac{5}{6} \times \frac{4}{4}\right)$ (B) $\left(\frac{7}{8} \times \frac{4}{4}\right) - \left(\frac{5}{6} \times \frac{3}{3}\right)$
 (C) $\left(\frac{7}{8} \times \frac{5}{5}\right) - \left(\frac{5}{6} \times \frac{7}{7}\right)$ (D) $\left(\frac{7}{8} \times \frac{7}{7}\right) - \left(\frac{5}{6} \times \frac{5}{5}\right)$

EVERYDAY MATHEMATICS

18. Ram can throw a ball $50\frac{3}{5}$ metres high. Shyam can throw the same ball $48\frac{1}{3}$ metres high. How much farther can Ram throw the ball than Shyam?

- (A) $2\frac{2}{15}$ m (B) $2\frac{4}{15}$ m (C) $2\frac{3}{5}$ m (D) $2\frac{4}{5}$ m

19. In a parking lot, 1 out of every 8 cars is blue. What percent of the cars in this lot are blue?

- (A) 1.25% (B) 7% (C) 9% (D) 12.5%

20. A duck flew at 18 km per hour for 3 hours, then at 15 km per hour for 2 hours. How far did the duck fly in all?

- (A) 69 km (B) 75 km (C) 81 km (D) 84 km

SAMPLE ANSWER SHEET

1. **NAME** : If your name is SACHIT AIYER, then you should write as follows :

S	A	C	H	I	T	A	I	Y	E	R										
---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--

2. **Father's Name** : If your father's name is SATISH KUMAR SHARMA, then you should write as follows :

S	A	T	I	S	H	K	U	M	A	R	S	H	A	R	M	A				
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--

SCHOOL CODE					
M	H	0	5	4	7
A	A	0	0	0	0
B	B	1	1	1	1
C	C	2	2	2	2
D	D	3	3	3	3
E	E	4	4	4	4
F	F	5	5	5	5
G	G	6	6	6	6
H	H	7	7	7	7
I	I	8	8	8	8
J	J	9	9	9	9
K	K				
L	L				
M	M				
N	N				
O	O				
P	P				
Q	Q				
R	R				
S	S				
T	T				
U	U				
V	V				
W	W				
X	X				
Y	Y				
Z	Z				

3. **SCHOOL CODE**
Write your school code
i.e. if your school code
is MH0547 darken as
follows :

Darken
the circle

6. **GENDER**
If you are a boy,
then darken
Male circle

GENDER	
MALE	<input checked="" type="radio"/>
FEMALE	<input type="radio"/>

4. **CLASS**
If you are in Class
10, then you should
darken as follows :

5. **ROLL NO.**
If your roll no. is 587,
then you should write
and darken the circles
as follows :

CLASS			ROLL NO.		
1	0	5	8	7	
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Darken
the circle

CORRECT
way to darken
the circle

WRONG
way to darken
the circle

7. If your choice for Answer 1 is C, then you should darken the circle as follows : 1. (A) (B) (C) (D)

MARK YOUR ANSWERS WITH HB PENCIL/BALL POINT PEN (BLUE/BLACK)

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|--------------------|--------------------|---------------------|---------------------|---------------------|
| 1. (A) (B) (C) (D) | 5. (A) (B) (C) (D) | 9. (A) (B) (C) (D) | 13. (A) (B) (C) (D) | 17. (A) (B) (C) (D) |
| 2. (A) (B) (C) (D) | 6. (A) (B) (C) (D) | 10. (A) (B) (C) (D) | 14. (A) (B) (C) (D) | 18. (A) (B) (C) (D) |
| 3. (A) (B) (C) (D) | 7. (A) (B) (C) (D) | 11. (A) (B) (C) (D) | 15. (A) (B) (C) (D) | 19. (A) (B) (C) (D) |
| 4. (A) (B) (C) (D) | 8. (A) (B) (C) (D) | 12. (A) (B) (C) (D) | 16. (A) (B) (C) (D) | 20. (A) (B) (C) (D) |

ANSWERS

International Mathematics Olympiad

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|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (A) | 2. (D) | 3. (A) | 4. (B) | 5. (A) | 6. (D) | 7. (C) | 8. (D) | 9. (C) | 10. (B) |
| 11. (C) | 12. (D) | 13. (A) | 14. (C) | 15. (B) | 16. (D) | 17. (A) | 18. (B) | 19. (D) | 20. (D) |