

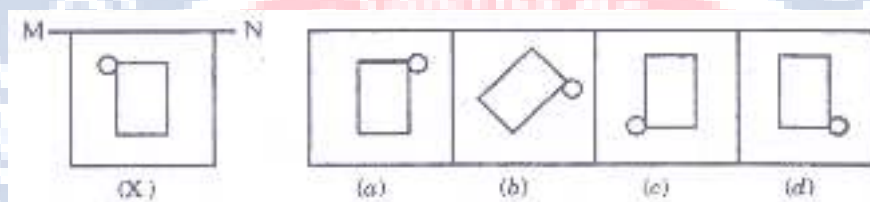
International Foundation Mathematics Olympiad(IFMO)

CLASS 10

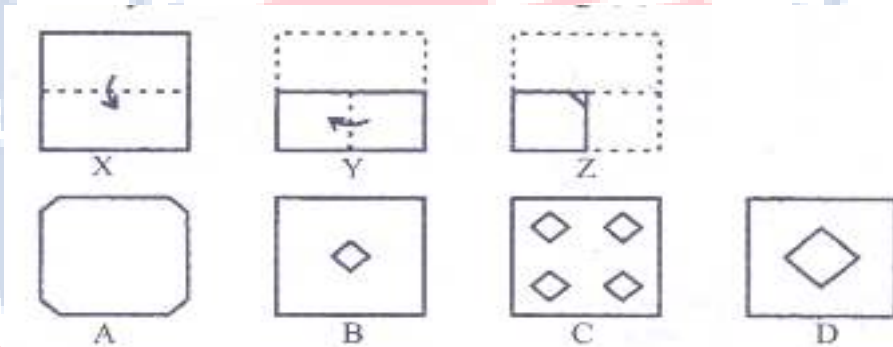
WORKSHEET – 1

SECTION-A (Logical Reasoning)

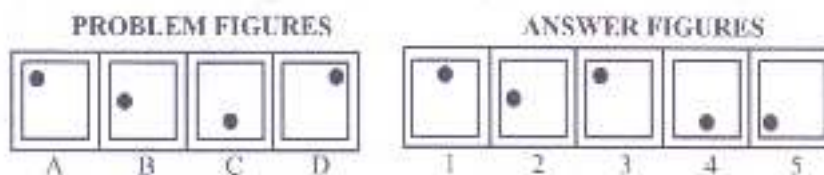
1. In the following question, choose the correct mirror-image of the Fig. (X) from amongst the four alternatives (a), (b), (c) and (d) given along with it. The mirror may be represented by a line MN or M_1M_2 .



2. The following question consists of a set of three figures X,Y and Z showing a sequence of folding of a piece of paper. Fig (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of fig (Z).



3. The following question consists of four problem figures marked A,B,C and D and five Answer Figures marked 1,2,3,4, and 5. Select a figure form amongst the Answer Figures which will continue the series established by the four Problem Figures.



4. If the first three letters of the word COMPREHENSION are reversed and the last three letters are added and then the remaining letters are reversed and added then which letter will be exactly in the middle?
- A) H
 - B) S
 - C) N
 - D) R
5. Which letter is the eighth to the left on sixteenth letter from the right end when A to Z are arranged in sequence?
- a) B
 - b) S
 - c) H
 - d) C
6. Roshan went 15 km to the west from my house then turned left and walked 20 kms. He then turned east and walked 25 kms and finally turning left covered 20 kms. How far was he from his house?
- a) 5 kms
 - b) 10 kms
 - c) 40 kms
 - d) 80 kms
7. In the following question, three are alike and so form a group. Which is the one that does not belong to that group?
- a) Bangle
 - b) Necklace
 - c) Ring
 - d) Ornament
8. In the following questions, four pairs of words are given. Out of which the words in three pairs bear a certain common relationship. Choose the pair in which words are differently related.
- a) Grain : Crop
 - b) Chaff : Wheat
 - c) Dregs : Wine
 - d) Grit : Pulses

9. What number should replace the question mark?

2836 : 13; 9423 : 14; 7229 : ?

- a) 20
- b) 18
- c) 16
- d) 12

10. In question three words are given, which have something in common among themselves. Out of four given alternatives choose the most appropriate description about these words.

Tola : Masha : Ratti

- a) They are fruits of wild plants.
- b) They are units of time
- c) These are terms used in Ayurveda
- d) These are units of weight

SECTION-B (Day to Day Mathematics)

11. A bag contains 5 red balls and some black balls. If the probability of drawing a black ball from the bag is twice that of a red ball. Find the number of black balls in the bag.

- a) 7
- b) 12
- c) 10
- d) 15

12. If the numbers 25, 31, $x - 3$, 37, $x + 4$, 42, 43, 45, 46 are in ascending order and their median is 39. What is the number x ?

- a) 40
- b) 35
- c) 32
- d) 42

13. A hollow sphere of internal and external diameter 4 cm and 8 cm respectively is melted into a cone of base diameter 8 cm. Find the height of the cone.
- a) 12 cm
 - b) 16 cm
 - c) 14 cm
 - d) 7 cm
14. The height of a conical tent is 14 m and its floor area is 346.5 m^2 . How much canvas 1.1. m wide will be required for it?
- a) 525 m
 - b) 860 m
 - c) 665 m
 - d) 425 m
15. In a circle of radius 10.5 cm, the minor arc is one-fifth of the major arc. What is the area of major arc?
- a) 288.75 cm^2
 - b) 281.75 cm^2
 - c) 271.25 cm^2
 - d) 262.75 cm^2
16. If the area of a sector of a circle is $\frac{7}{20}$ of the area of the circle, then what is the sector angle of the circle?
- a) 126°
 - b) 130°
 - c) 110°
 - d) 120°
17. For all values of θ , $1 + \cos\theta$ can be ____
- a) Positive
 - b) Negative
 - c) non-positive
 - d) non-negative

18. If (2, -2), (-2, 1) and (5, 2) are vertices of a right angled triangle, then the area of triangle is
- 24.559 units
 - 12.5 sq. units
 - 12 sq. units
 - 24 sq. units
19. What is the value of 'a' except zero for which the area of the triangle formed by the points A(a, 2a), B(-2, 6), C(3, 1) is 10 square units?
- $\frac{3}{8}$
 - $\frac{8}{3}$
 - 3
 - None of these
20. An exterior angle of a triangle measures 110° and its interior opposite angles are in the ratio 2: 3. Which is the largest angle of the triangle?
- 66°
 - 70°
 - 44°
 - 64°
21. In an arithmetic progression if p^{th} term is q and q^{th} term is p. then what is its n^{th} term?
- $p + q$
 - $p - q$
 - $p + d - n$
 - None of these
22. Which statement best describes the solutions to the equation below?
 $3x^2 - 5x + 20 = 0$
- There are 2 rational solutions
 - There are 2 irrational solutions
 - There are no real solutions
 - There is one rational solution

23. What are the values of m and n for which the system of linear equation has infinitely many solutions, $3x + 4y = 12$, $(m + n)x + 2(m - n)y = (5m - 1)$?
- $m = 1, n = 1$
 - $m = 5, n = 1$
 - $m = 1, n = 5$
 - $m = 5, n = 2$
24. If the sum of squares of zeroes of the quadratic polynomial $P(x) = x^2 - 8x + k$ is 40. What is the value of k ?
- 12
 - 16
 - 18
 - 8
25. The product of H.C.F. and L.C.M. of the smallest prime number and smallest composite number is
- 2
 - 6
 - 4
 - 8

ANSWER IFMO CLASS 10 – WORKSHEET – 1

1	C	2	B	3	C	4	B	5	C	6	B	7	D	8	A	9	C	10	D
11	C	12	B	13	B	14	A	15	A	16	A	17	D	18	B	19	D	20	B
21	C	22	C	23	B	24	A	25	D										