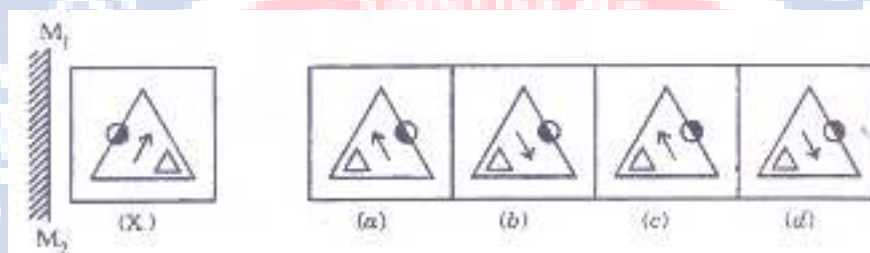


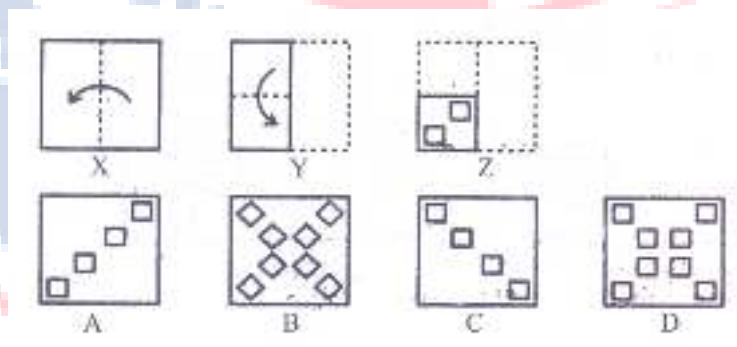
International Foundation Mathematics Olympiad(IFMO) CLASS 10 WORKSHEET – 4

SECTION-A (Logical Reasoning)

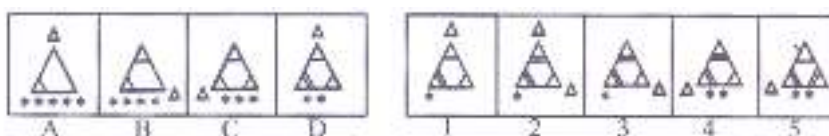
1. In the following question, choose the correct mirror-image of the Fig. (X) from amongst the four alternatives (a), (b), (c) and (d) given along with it. The mirror may be represented by a line M_1M_2 .



2. The following question consist 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 questions 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. A meaningful word starting with A is made from the first, second, Fourth, fifth and sixth letter of the word 'contract'. Which of the following is the middle letter of the word?
- C
 - O
 - R
 - T
5. In the following questions, a group of letters is given which are numbered 1, 2, 3, 4, 5, 6. Below are-given four alternatives containing combination of these numbers. Select that combination of numbers so that letters arranged accordingly form a meaningful word.
- T L P N A E
- 3, 2, 5, 4, 6, 1
 - 4, 5, 3, 6, 2, 1
 - 3, 2, 5, 4, 1, 6
 - 4, 6, 1, 3, 5, 2
6. After walking 6 km, I turned right and covered a distance of 2 km and then turned left and covered a distance of 10 km. In the end, I was moving towards the North. From which direction did I start my journey?
- South
 - North
 - West
 - East
7. In the following question, three are alike and so form a group. Which is the one that does not belong to that group?
- Pool
 - Brook
 - Lake
 - Pond
8. In the following question, four numbers are given. Out of these three are similar in a certain way but the rest one is different. Choose the one which is different from the rests.
- 427
 - 671
 - 572

- d) 385
9. Oxygen : Burn :: Carbon dioxide :?
- a) Isolate
 - b) Explode
 - c) Foam
 - d) Extinguish
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.
- Aorta : Pulmonary : Ventricle
- a) These are blood supplier veins
 - b) These are related to lungs
 - c) These are parts of heart
 - d) These are various sections of food pipe

SECTION-B (Day to Day Mathematics)

11. If a number x is chosen at random from the numbers -3, -2, -1, 1, 2, 3, 4. What is the probability that $x^2 < 12$?
- a) $\frac{6}{7}$
 - b) $\frac{4}{7}$
 - c) $\frac{3}{7}$
 - d) $\frac{2}{7}$
12. If the difference between the mode and median is 2, then the difference between the median and mean is _____ (in the given order)
- a) 2
 - b) 4
 - c) 1
 - d) 0

13. A solid iron hemisphere is melted and a number of solid iron balls of equal size are made. The radius of each ball is one-fourth the radius of the hemisphere. What are the number of balls that can be made?
- a) 32
 - b) 16
 - c) 64
 - d) 30
14. The radii of two cylinders are in the ratio 2 : 3 and their heights are in the ratio 5:3. What is the ratio of their volumes?
- a) 20 : 27
 - b) 27 : 20
 - c) 9 : 4
 - d) 4 : 9
15. The diameter of the front and rear wheels of a tractor are 80 cm and 200 cm respectively. What are the number of revolution that a rear wheel makes to cover the distance which the front wheel covers in 800 revolutions?
- a) 640
 - b) 320
 - c) 240
 - d) 300
16. What is the length of tangent drawn from a point whose distance from the centre of a circle is 25 cm, if radius of the circle is 7 cm?
- a) 24 cm
 - b) 25 cm
 - c) 26 cm
 - d) 30 cm
17. The length of the side (in cm) of an equilateral triangle inscribed in a circle of radius 8 cm is
- a) $16\sqrt{3}$
 - b) $12\sqrt{3}$
 - c) $8\sqrt{3}$
 - d) $10\sqrt{3}$

18. What is the locus of a point equidistant from the point (2, 4) and y-axis?
- $y^2 - 8x - 4y + 20 = 0$
 - $y^2 - 4x - 8y + 20 = 0$
 - $x^2 - 4x + 4y + 20 = 0$
 - $y^2 - 4x - 8y + 12 = 0$
19. The centre of a circle is C(2, k). If A(2, 1) and B(5, 2) are two points on its circumference, then the value of k is
- 6
 - 2
 - 6
 - 2
20. $\triangle ABC$ is a right angled triangle in which $\angle C = 90^\circ$, $AC = \sqrt{3}BC$. What is the measure of $\angle B$?
- 30°
 - 45°
 - 60°
 - None of these
21. If $S_1, S_2, S_3, \dots, S_m$ are the sum of n terms of m arithmetic progression whose first terms are 1, 2, 3, ..., m and common difference are 1, 3, 5, ..., $(2m - 1)$ respectively. What is the value of $S_1 + S_2 + \dots + S_m$?
- $\frac{mn}{2}(mn + 1)$
 - $\frac{mn}{2}(mn - 1)$
 - $\frac{m+n}{2}(mn + 1)$
 - None of these
22. If one root of the equation $x^2 + px + 12 = 0$ is 4, while the equation $x^2 + px + q = 0$ has equal roots then the value of q is
- $\frac{4}{49}$
 - 4
 - $\frac{49}{4}$
 - $\frac{7}{4}$

23. A railway half ticket cost half the full fare and the reservation charge is the same on half ticket as on full ticket. One reserved first class ticket from Delhi to Patna cost Rs. 216. One full and one half reserved first class ticket cost Rs. 328. What is the reservation charge?
- Rs. 16
 - Rs. 26
 - Rs. 6
 - None of these
24. If the polynomial $6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by another polynomial $3x^2 + 4x + 1$, the remainder comes out to be $ax + b$. What is the value of a and b ?
- $a = 1, b = 2$
 - $a = 2, b = 1$
 - $a = -2, b = 1$
 - $a = -1, b = -2$
25. Which of the following is always true?
- The rationalising factor of a number is unique.
 - The sum of two distinct irrational numbers is rational
 - The product of two distinct irrational numbers is irrational
 - None of these

ANSWER IFMO CLASS 10 – WORKSHEET - 4

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