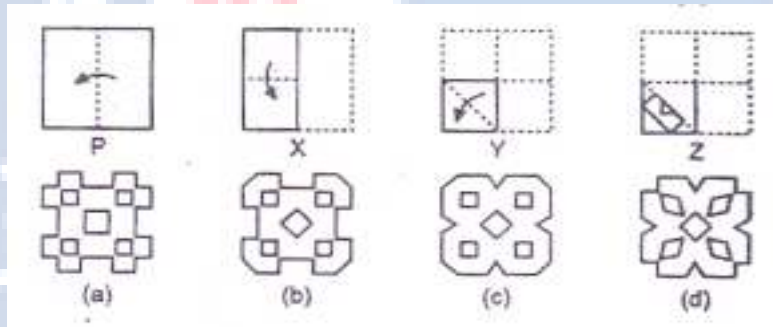


International Foundation Mathematics Olympiad(IFMO)
CLASS 9
WORKSHEET – 3

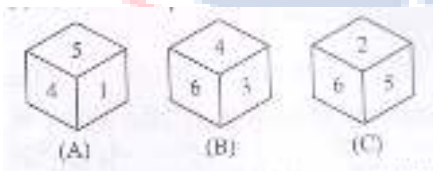
SECTION-A (Logical Reasoning)

1. In the following question, a set of three figures X,Y,Z have been given, showing a sequence in which a paper is folded and finally cut from a particular section. Below these figures a set of answer figures marked (a, b, c, d) showing the design which the paper actually acquires when it is unfolded are given. You have to select the answer figure which most closely resembles the unfolded piece of paper.



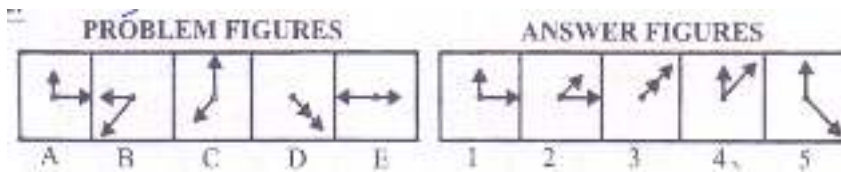
2. Unscramble the letters of the words given and find odd one
 a) IGRN
 b)TSIKR
 c)ABGELN
 d)ECLNKAEC

3. In the given figure, which number lies at the bottom face in position B?



- a) 2
 b) 3
 c) 4
 d) 5
4. This type of problem on series consists of five figures numbered A,B,C, D and E forming the set of problem figures, followed by five other figures numbered

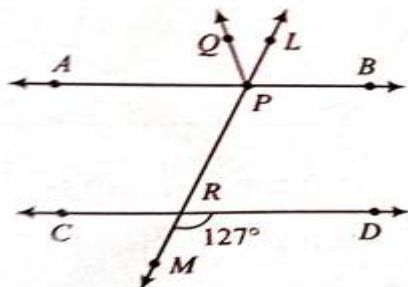
1,2,3,4 and 5 forming the set of Answer figures. The five consecutive problem figures form a definite sequence and it is required to select one of the figures from the set of Answer figures which will continue the same sequence.



5. a) 12 c) 13
b) 14 d) 16
6. If $A + E = B + C$, $A + B = C + D$, $B + C > D + E$, $A + D > B + E$, $A + E > C + D$ then which of the following is correct?
a) $C > A > E > B > D$ c) $A > E > C > D > B$
b) $D > B > E > A > C$ d) $A > C > B > E > D$
7. How many meaningful words can be formed with the first, third, 7th and 9th letters of the word SEPARATION using each letter only once in each word?
a) One c) Three
b) Two d) None of these
8. If $2 = 5$, $4 = 18$, $6 = 39$ then what is value of 10?
a) 100 c) 81
b) 105 d) 45
9. There is a certain relation between two given words on one side of :: and one word is given on another side of :: while another word is to be found from the given alternatives having the same relations with this word as the given pair has. Select the best alternative.
Elegance : Vulgarly :: Graceful : ?
a) Comely c) Dirty
b) Awkward d) Asperity
10. There is a series of numbers which follow some definite order. Find the missing term and complete the series.
2, 4, 4, 8, 16, 16, 256, ____
a) 60 c) 32
b) 36 d) 180

SECTION-B (Day to Day Mathematics)

11. Number of terms in the expanded form of $(x - y - z)^2$ will be
- a) 6 c) 12
 b) 9 d) 3
12. If $x - 1$ is a factor of $4x^3 + 3x^2 - 4x + k$, then $k =$
- a) 3 c) -3
 b) -2 d) 1
13. If a circle is such that x-axis is tangent to it, if the coordinate of centre of circle is (2,3), then the point of tangency will have ordinate equal to
- a) 2 c) -3
 b) 0 d) -4
14. The area of equilateral triangle whose two vertices are (3,0) and (4, 0) will be {in sq. units}:
- a) $\frac{\sqrt{3}}{4}$ c) $\sqrt{3}$
 b) $\frac{\sqrt{3}}{2}$ d) $2\sqrt{3}$
15. If $(2k - 3, k)$ is a solution of the equation $6x + 2y = k - 5$, then $k =$
- a) -1 c) 1
 b) -2 d) 2
16. Which of the following statements is wrong?
- a) A circle can be drawn with any centre and any radius
 b) All right angles are equal to one another
 c) Things which are halves of the same thing are equal to one another
 d) The part of a thing is greater than whole
17. PQ trisects $\angle APL$, then the measure of $\angle LPQ$ is:



a) $(42\frac{1}{3})^0$

c) $(47\frac{2}{3})^0$

b) $(48\frac{2}{3})^0$

d) $(19\frac{1}{3})^0$

18. If the bisectors of the acute angles of a right triangle meet at O, then the angle between the two bisectors at O is equal to:

a) 45°

c) 135°

b) 90°

d) 95°

19. If an angle of a parallelogram is two third of its adjacent angle what is the measure of smallest angle of parallelogram?

a) 81°

c) 54°

b) 72°

d) 108°

20. Select the incorrect statement

a) Every square is a rectangle

b) Every rectangle is a parallelogram

c) The opposite angles of rhombus are equal

d) Every kite is parallelogram

21. A parallelogram and a rectangle are constructed on same base and between the same parallels, they have

a) Equal area

c) $\text{ar}(\text{Parallelogram}) > \text{ar}(\text{Rectangle})$

b) Unequal area

d) $\text{ar}(\text{Rectangle}) > \text{ar}(\text{Parallelogram})$

22. If a square and rhombus have same perimeter, and area of square is S and area of rhombus is R, then

a) $S > R$

c) $R = S$

b) $R > S$

d) data insufficient

23. Water flows in a tank $150\text{ m} \times 100\text{ m}$ at the base through a pipe whose cross-section is $2\text{ dm} \times 1.5\text{ dm}$ at the speed of 15 km per hour . In what time will the water be 3 meters deep ?

a) 100 hours

c) 80 hours

b) 120 hours

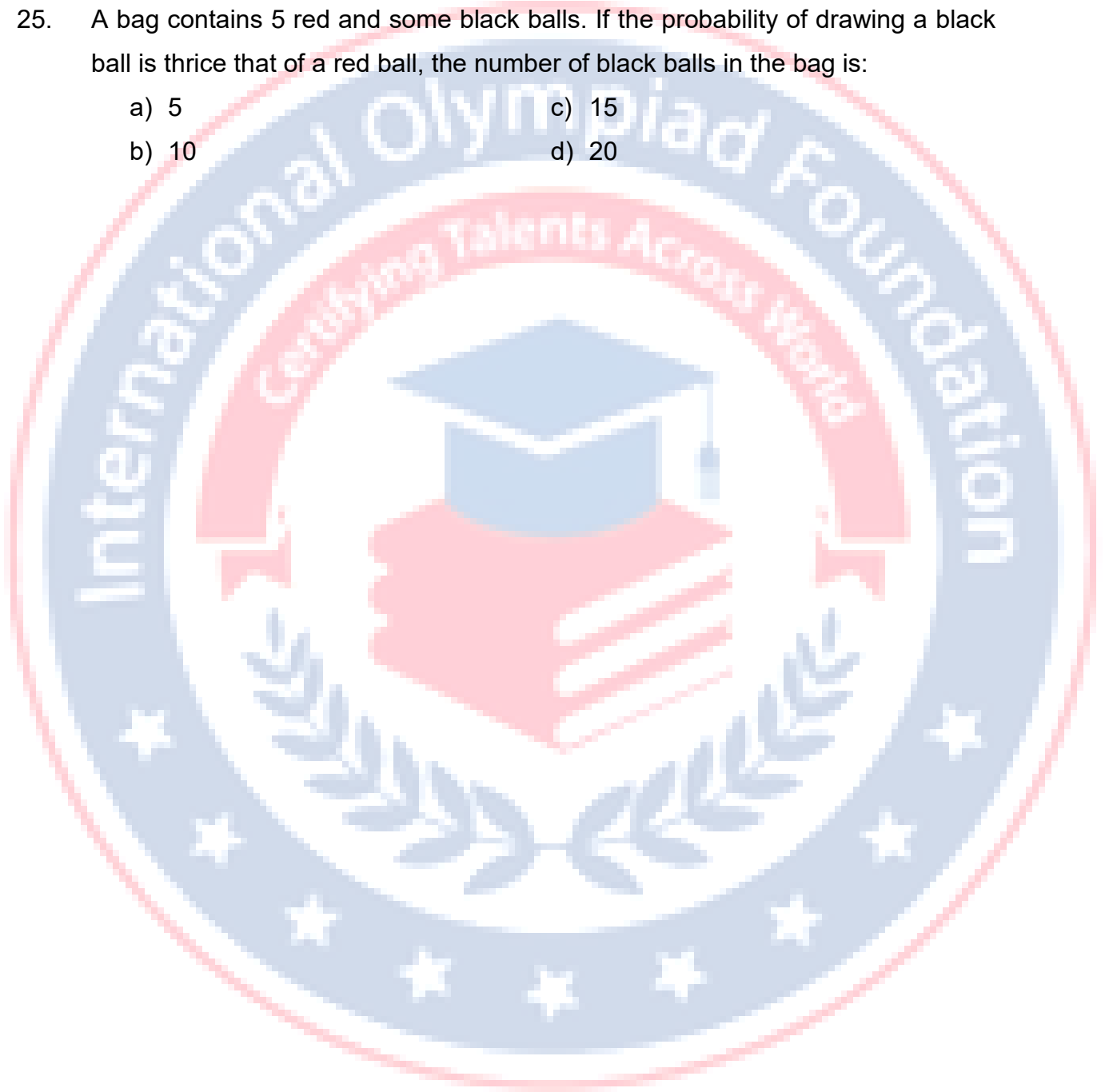
d) 150 hours

24. In the 'more – than' type of ogive the cumulative frequency is plotted against.:

- a) The lower limit of the concerned class interval
- b) The mid value of the concerned class interval
- c) The upper limit of the concerned class interval
- d) Any value of the concerned class interval

25. A bag contains 5 red and some black balls. If the probability of drawing a black ball is thrice that of a red ball, the number of black balls in the bag is:

- a) 5
- b) 10
- c) 15
- d) 20



ANSWER IFMO CLASS 9 – WORKSHEET - 3

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

