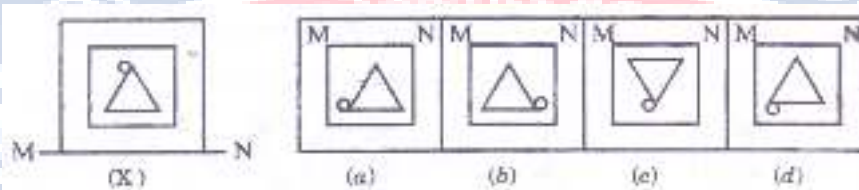


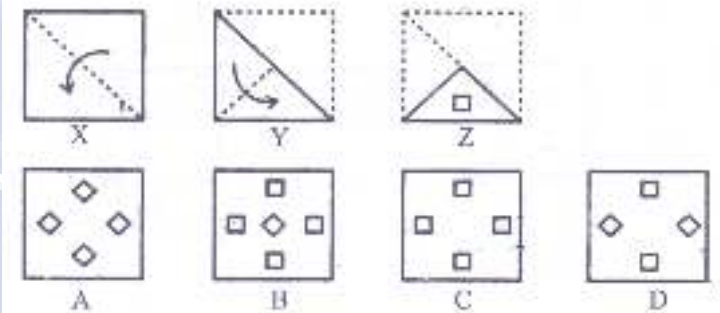
# International Foundation Mathematics Olympiad(IFMO) CLASS 10 WORKSHEET – 3

## SECTION-A ( Logical Reasoning )

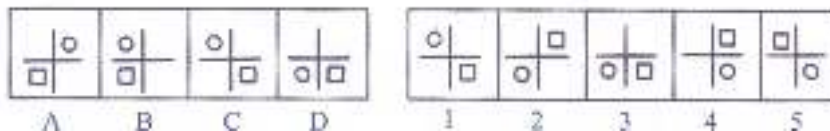
1. In the following question, choose the correct mirror-image of the Fig. (X) from amongst the four alternatives (a), (b), (c) and (d) given along with it. The mirror is represented by a line MN .

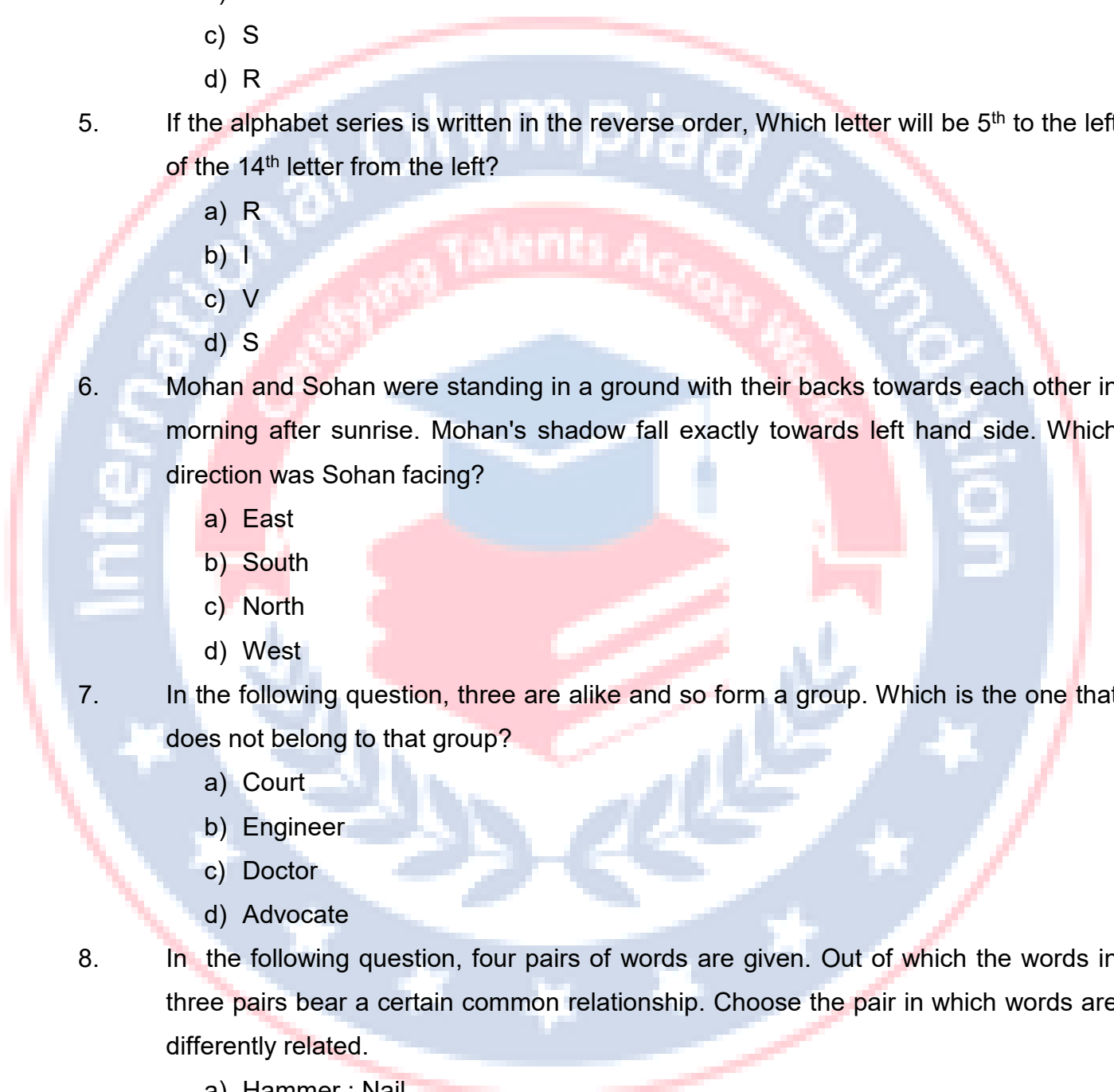


2. In the following question, three figures X,Y and Z showing a sequence of folding a circular sheet of paper are given. The third figure Z depicts the cuts made in the folded paper. Select a figure from among the four alternative figures marked A,B, C and D which would most closely resemble the paper in fig. (Z) when unfolded.



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.



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4. If the first and second letters in the word DEPRESSION were interchanged also the 3<sup>rd</sup> and 4<sup>th</sup> letters, the 5<sup>th</sup> and 6<sup>th</sup> letters and so on. Which of the following would be the seventh letter from the right?
- P
  - O
  - S
  - R
5. If the alphabet series is written in the reverse order, Which letter will be 5<sup>th</sup> to the left of the 14<sup>th</sup> letter from the left?
- R
  - I
  - V
  - S
6. Mohan and Sohan were standing in a ground with their backs towards each other in morning after sunrise. Mohan's shadow fall exactly towards left hand side. Which direction was Sohan facing?
- East
  - South
  - North
  - West
7. In the following question, three are alike and so form a group. Which is the one that does not belong to that group?
- Court
  - Engineer
  - Doctor
  - Advocate
8. In the following question, 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.
- Hammer : Nail
  - Pen : Pencil
  - Shovel : Mud
  - Screwdriver : Screw

9. TSR : FED :: WVU:?
- a) MLK
  - b) GFH
  - c) CAB
  - d) PQS
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.
- Hamlet : Macbeth : Faustus
- a) These are plays by Shakespeare
  - b) They are kings
  - c) They are characters who were murderers
  - d) They are famous characters from various dramas.

### SECTION-B ( Day to Day Mathematics )

11. A Jar contains 54 marbles each of which is blue, green or white. The probability of getting a blue marble at random from the Jar is  $\frac{1}{3}$  and the probability of getting a green marble at random is  $\frac{4}{9}$ . What is the number of white marbles?
- a) 12
  - b) 10
  - c) 21
  - d) 15
12. If the greater than cumulative frequency of a class is 60 and that of the next class is 40, then find the frequency of that class.
- a) 10
  - b) 20
  - c) 50
  - d) Cannot say
13. A circus tent is cylindrical to a height of 4 m and cone above it. If its diameter is 105 m and its slant height is 40 m. What is the total area of canvas required?
- a)  $1760 \text{ m}^2$
  - b)  $3960 \text{ m}^2$
  - c)  $7920 \text{ m}^2$

- d)  $2640 \text{ m}^2$
14. The ratio between the volumes of two spheres is  $8 : 27$ . What is the ratio between their surface area?
- a)  $2 : 3$   
b)  $4 : 5$   
c)  $5 : 6$   
d)  $4 : 9$
15. A pendulum swings through an angle of  $30^\circ$  and describes an arc  $8.8 \text{ cm}$  in length, then what is the length of the Pendulum?
- a)  $16.8 \text{ cm}$   
b)  $12.8 \text{ cm}$   
c)  $14.2 \text{ cm}$   
d)  $15.6 \text{ cm}$
16. A bicycle wheel makes  $5000$  revolutions in moving  $11 \text{ km}$ . What is the radius of the wheel?
- a)  $45 \text{ cm}$   
b)  $25 \text{ cm}$   
c)  $35 \text{ cm}$   
d) None of these
17. Which of the following is not possible?
- a)  $\sin \theta = \frac{3}{5}$   
b)  $\sec \theta = 100$   
c)  $\operatorname{cosec} \theta = 0.14$   
d) None of these
18. The ends of a diagonal of a square have the co-ordinates  $(a, 1)$  and  $(-1, a)$ , find  $a$  if the area of the square is  $50$  square units.
- a)  $\pm 7$   
b)  $\pm 5$   
c)  $\pm 6$   
d)  $\pm 4$

19. If  $(-2, 1)$  is the centroid of the triangle having its vertices  $(x, 0)$ ,  $(5, -2)$  and  $(-8, y)$  then which of the following is correct?
- $3x - 8y = 0$
  - $5x + 3y = 0$
  - $8x + 3y = 0$
  - $8x - 3y = 0$
20. Two isosceles triangles with equal vertical angles have their areas in the ratio  $225:289$ . What is the ratio between corresponding altitudes?
- $17:15$
  - $15:17$
  - $15:13$
  - $13:15$
21. Find the sum of  $n$  terms of an arithmetic progression whose  $k$ th term is  $5k + 1$
- $\frac{n}{2}(5n + 1)$
  - $\frac{n}{2}(5n + 6)$
  - $\frac{n}{2}(5n + 7)$
  - None of these*
22. If the equation  $mx^2 + nx + p = 0$  has equal roots then what is the value of  $p$ ?
- $\frac{n^2}{4m}$
  - $\frac{m}{4n^2}$
  - $\frac{n}{2m}$
  - $\frac{-n}{2m}$
23. Rajesh scored 40 marks in a test getting 3 marks for each right answer and losing one mark for each wrong answer. If 4 marks have been awarded for each correct answer and 2 marks been deducted for each incorrect answer then Rajesh will score 50 marks. What is the number of questions in the test?
- 30
  - 20
  - 15
  - 40

24. If the product of two zeroes of the polynomial  $2x^3 + 6x^2 - 4x + 9$  is 3 then what is its third zero?

- a)  $\frac{3}{2}$
- b)  $\frac{5}{2}$
- c)  $\frac{1}{2}$
- d)  $-\frac{3}{2}$

25. N is a natural number such that when  $N^3$  is divided by 9, it leaves remainder a. it can be concluded that

- a) a is a perfect square
- b) a is a perfect cube
- c) Both (a) and (b)
- d) Neither (a) nor (b)

**ANSWER IFMO CLASS 10 – WORKSHEET - 3**

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