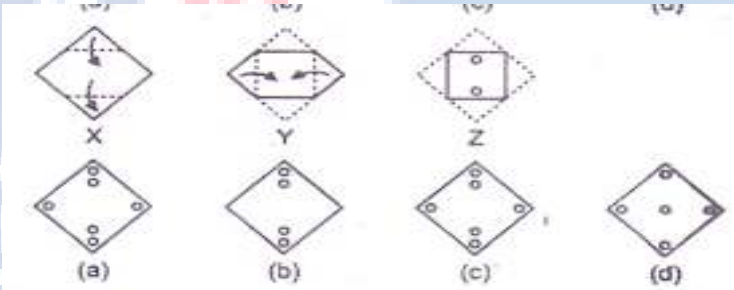
International Foundation Mathematics Olympiad(IFMO)
CLASS 9
WORKSHEET – 2

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) WHLEA

   b) WROC

   c) ALEEG

   d) SORWARP

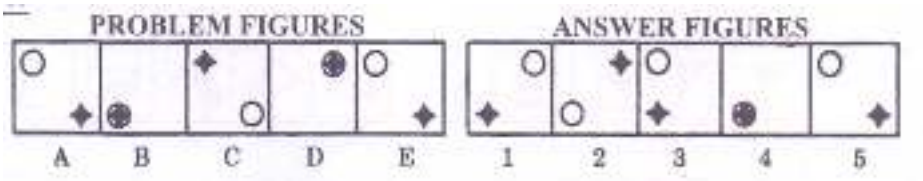
3. In the figure given below. Find the number on the face opposite the face showing 4.

   a) 1 c) 5

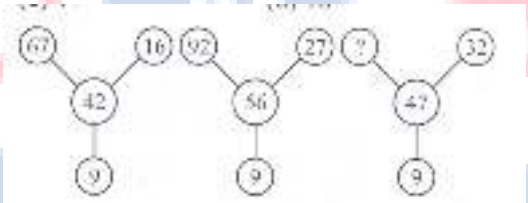
   b) 2 d) 6

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. In each of the following questions a set of figures carrying certain characters is given. The characters in each set follow a similar pattern. What is the missing character in each case?



a) 78
b) 68
c) 98
d) 88

6. If A + B = C + D and A + D > B + C then which of the following is definitely wrong?
a) B > D
b) C > D
c) A > C
d) A > B

7. Which letter in the word CYBERMETICS occupies the same position as it does in the English alphabet?
a) E
b) I
c) T
d) C

8. If ENGLAND is coded as 1234526, FRANCE is written as 785291, then what is the code for GREECE?
a) 381191
b) 381171
c) 812271
d) 382171

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.

Skirmish: War : : Disease :?

a) Patient
b) Medicine
c) Infection
d) Epidemic
e)

10. There is a series of numbers which follow some definite order. Find the missing term and complete the series.

10, 17, 26, 37, 50, ...?

a) 76
c) 95
b) 65
d) 84

SECTION-B (Day to Day Mathematics)

11. $a^2 + b^2 + c^2 – ab – bc – ca$ will have:

a) Always negative value
c) Always non-negative value
b) Always positive value
d) Insufficient data given

12. If the polynomials $ax^3 + 4x^2 + 3x – 4$ and $x^3 – 4x + a$ have x-3 as a factor then the value of a is equal to

a) 2
c) -1
b) -2
d) 1

13. If the abscissa of a point is negative. The point will lie in

a) I or III quadrant
c) I or IV quadrant
b) II or III quadrant
d) In III or IV quadrant

14. A rhombus PQRS has side length equal to 5 units, where, P (0,0), Q (6,0), R (3, 4) then the coordinates of S will be:

a) (-3, -4)
c) (3, -4)
b) (-3,4)
d) (5,4)

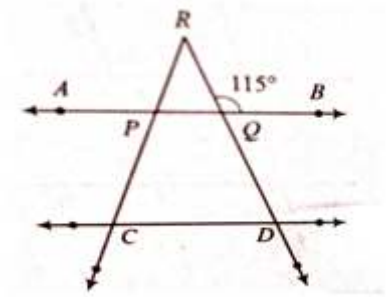
15. The equation $x – y + 1 = 0$ is satisfied by $x = a^2$ and $y = a$ then a =

a) Can't be determined
c) -1
b) 2
d) -2

16. Which of the following statements is correct?

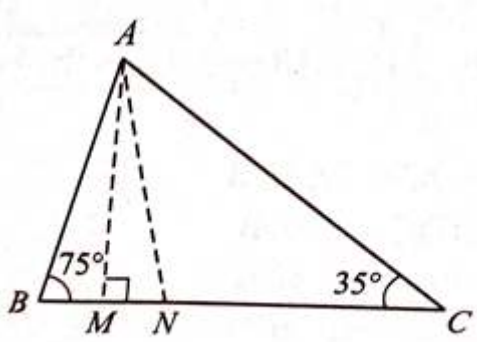
a) A line contains definite number of points
b) Through a point 2 lines can be drawn only
c) If there are 2 fixed points A and B then there will be two lines AB between them
d) A terminated line can be produced infinitely

17. AB‖ CD and $\angle RQB = 115^0$, and $\angle PRQ = 30^0$. The measure of $\angle APC$ is:



a) 115^0
c) 85^0
b) 45^0
d) 30^0

18. AN is the bisector of $\angle A$ and AM$\perp BC$. Then measure of $\angle MAN$ is:



a) 35^0
c) 20^0
b) 30^0
d) 25^0

19. If the length of each side of rhombus is 15 cm and one of its diagonals is 24 cm what is length of other diagonal?

a) 16 cm
c) 18 cm
b) 14 cm
d) 12 cm

20. Select the correct statement.

a) Every rectangle is a square
b) Every square is a rhombus
c) Every rhombus is a parallelogram
d) Every parallelogram is a rhombus

21. If a triangle and a parallelogram are on the same base and between the same parallels, and area of triangle is A, then area of ||gm is:

a) $\frac{A}{2}$
c) 3A
b) 2A
d) 4A

22. The sides of a triangle are 11cm, 15 cm and 16 cm. The altitude to the largest

side is:

a) 30 cm

b) $\frac{15\sqrt{7}}{4}$ cm

c) $\frac{15\sqrt{7}}{2}$ cm

d) $20\sqrt{7}$ cm

23. The diameter of the moon is approximately ¼th of the diameter of the earth. What fraction of the volume of earth is the volume of moon?

a) $\frac{1}{16}$

b) $\frac{1}{32}$

c) $\frac{1}{64}$

d) None of these

24. A frequency polygon is constructed by plotting frequency of the class interval and the

a) Upper limit of the class'

b) Lower limit of the class

c) Mid value of the class

d) Any values of the class

25. A bag contains cards marked with numbers 51, 52, ... 100. A number is selected at random. What is the probability of getting a number which is not a multiple of 5?

a) $\frac{1}{5}$

b) $\frac{2}{5}$

c) $\frac{3}{5}$

d) $\frac{4}{5}$

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