DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
HALF YEARLY EXAMINATION (2017-18)

Class:- VII   **Subject:- Mathematics**
Time- 3 Hrs.   **F. M:- 80**

Note :- Attempt all questions. There are no options overall. However there may be some internal choices. Rough work should be done in the right margin. Omission of steps may result in loss of marks.

<u>**Section – A**</u>   **[1x4=4]**

1. Find the product using suitable property
    $(-57) \times (-19) + 57$

2. Each side of a regular polygon is 3.4cm. The perimeter of the polygon is 20.4cm. How many sides does the polygon have ?

3. The lengths of two sides of a triangular are 6cm and 8cm. Between which two numbers can the length of the third side fall ?

4. What cross-section do you get when you give (i) a vertical cut and (ii) a horizontal cut to the following solids ?
    (a) A circular pipe
    (b) An ice-cream cone

<u>**Section – B**</u>   **[2x6=12]**

5. Simplify : $48 - [18 - \{16 - (5 - \overline{4 - 1})\}]$

6. Akash bought vegetables weighing 10kg. Out of these 3kg 500g is onion, 2kg 75g is tomato and the rest is potato. What is the weight of potato ?

7. Raju's father's age is 5 years more than three times Raju's age. Raju's father is 44 years old. Set up an equation for the above statement.

8. An angle is equal to five times its complement. Determine its measure.

9. The angles of a triangle are in the ratio 2 : 3 : 4. Determine all its angle.

10. If $\triangle ABC \cong \triangle FED$ under the correspondence $ABC \leftrightarrow FED$. Write all the corresponding congruent parts of the triangle.

<u>**Section – C**</u>   **[3x8=24]**
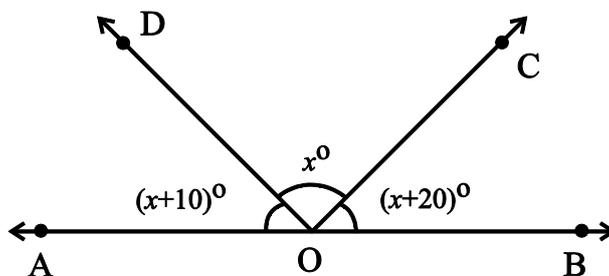
11. A cement company earns a profit of `8 per bag of white cement sold and a loss of ` 5 per bag of grey cement sold. The company sells 3,000 bags of white cement and 5,000 bags of grey cement in a month. What is its profit or loss ?

12. Michael finished colouring a picture in $\frac{7}{12}$ hours. Vaibhav finished colouring the same picture in $\frac{3}{4}$ hours. Who worked longer ? By what fraction it was longer ?

13. Solve the following equations
    (i) $7m + \frac{19}{2} = 13$ (ii) $16 = 4 + 3 (t+2)$

14. The runs scored in a cricket match by 11 players is as follows :

6, 15, 120, 50, 100, 80, 10, 15, 8, 10, 15

Find the mean, median, mode of this data.

15. The mean of 10 observation was calculated as 40. It was detected on rechecking that the value of 45 was wrongly copied as 15. Find the correct mean.
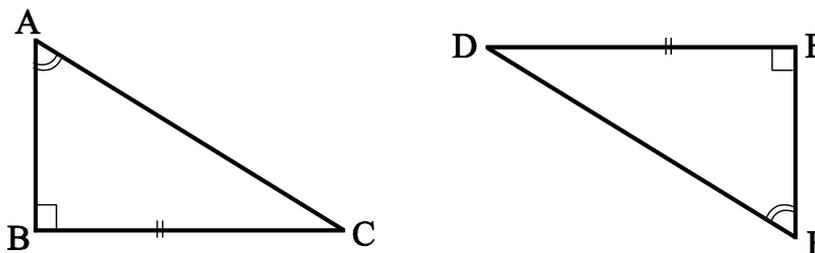
<div align="center">OR</div>

The cards bearing letters of the word 'MATHEMATICS' are placed in a bag. A card is taken out from the bag without looking into the bag.

(a) How many outcomes are possible when a letter is taken out of the bag at random ?

(b) What is the probability of getting any consonants ?

(c) What is the probability of getting the letter M ?

16. In the following figure find $\angle x$. Further find $\angle BOC$, $\angle COD$ and $\angle AOD$.
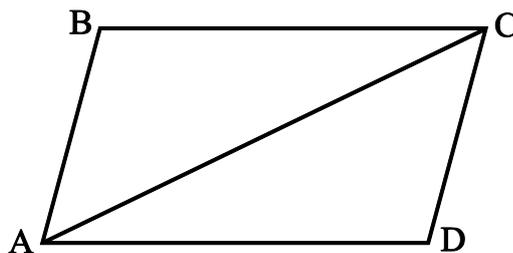

17. Explain, why $\triangle ABC \cong \triangle FED$.

<div align="center">OR</div>

In the given figure, AB ∥ DC and AB = DC.

(i)   State the three pairs of matching parts.

(ii) Is $\triangle ACD \cong \triangle CAB$? Give reasons.

18. Three cubes each with 2cm edge are placed side by side to form a cuboid. Make an oblique sketch and say what would be its length, breadth and height ?

Section – D   [4X10=40]

19. In a test (+5) marks are given for every correct answer and (–2) marks are given for every incorrect answer.
    (i) Radhika answered all the questions and scored 30 marks though she got 10 correct answers.
    (ii) Jaya also answered all questions and scored (–12) marks though she got 4 correct answers.
       How many incorrect answers had they attempted ?

20. Priya spends $\frac{3}{5}$ of her income on household expenses and $\frac{1}{7}$ of her income on personal expenses. If her income is `35,000. Find her monthly savings.

21. A bag contains 25 paise and 50 paise coins whose total value is `30. If the number of 25 paise coins is four times that of 50 paise coins, find the number of each type of coins.

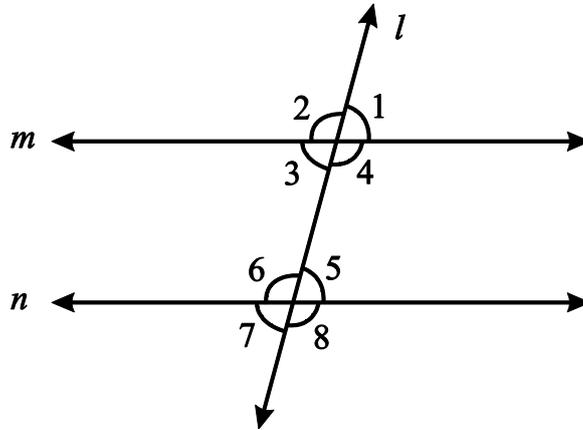   OR

    Solve and check the result :-

    $3 (x + 3) – 2 (x – 1) = 5 (x – 5)$

22. People of Sundergram planted trees in the village garden. Some of the trees were fruit trees. The number of non-fruit trees were two more than three times the number of fruit trees. What was the number of fruit trees planted if the number of non-fruit trees planted was 77 ?
    What value do the people of Sundergram show ?

23. The table below gives the flavours of ice-cream liked by children (boys and girls) of a society.

Flavour	Vanilla	Chocolate	Strawberry	Mango	Butterscotch
Boys	4	9	3	8	13
Girls	8	12	7	9	10

    (i) Draw a double bar graph using appropriate scale to represent the above information.
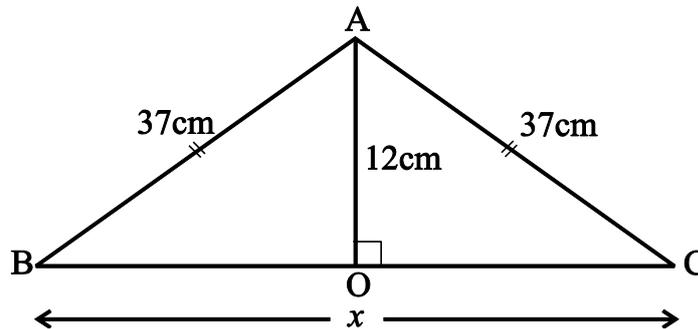   (ii) Find the ratio of children who like strawberry flavor to Vanilla flavor of ice-cream.

~ 3 ~

24. In the following figure if $\angle 2 = 120^O$ and $\angle 5 = 60^O$, show that m || n. Give proper reasons.

25. In a $\triangle ABC$, if $3\angle A = 4\angle B = 6\angle c$, calculate all the angles of the triangle.
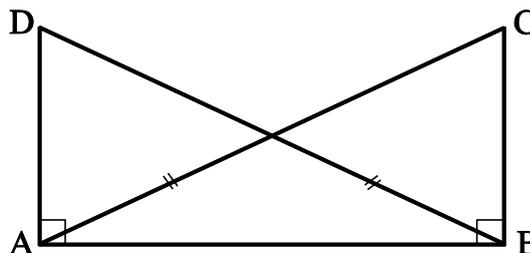
OR

Find the unknown length x in the following figure:

26. The diagonals of a rhombus measure 16cm and 30cm. Find its perimeter.

27. In the given figure DA $\perp$ AB, CB $\perp$ AB and AC = BD.
    (i)   State the three equal parts in $\triangle ABC$ and $\triangle DAB$.
    (ii) Which of the following elements is meaningful?
          (a) $\triangle ABC \cong \triangle BAD$
          (b) $\triangle ABC \cong \triangle ABD$

28. Draw the net pattern of
    (i)   A cube
    (ii) A tetrahedron

~ 4 ~

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