Class VI Mathematics

Time: 2 hour   Total Marks: 50

Solution
Section A

1. Correct answer: A
   $$1.35 = \frac{135}{100} = \frac{27 \times 5}{20 \times 5} = \frac{27}{20}$$

2. Correct answer: A
   Data collected from a group of 40 students is an example of primary data.

3. Correct answer: D

4. Correct answer: A
   Area of a square = side x side = p x p = p^2

5. Correct answer: B
   15:19

6. Correct answer: C
   An isosceles

7. Correct answer: A
   Protractor

8. Correct answer: C
   Out of the four the one-tenth part of 0.7 is the greatest. Hence, 0.7 has the highest value.

9. Correct answer: B
   $\frac{n}{5} - 8$ is the correct expression.

10. Correct answer: A
    Letter H has a horizontal line of symmetry.

Section B

11. Cost of a book = Rs 165.35

Cost of a pen = Rs 72.00

Cost of a notebook = Rs 14.85

Total Cost =

Rs 165.35
Rs 72.00
Rs 14.85
―――――――
Rs 252.20

Total money to be paid by Preeta = Rs 252.20

12. (a) Secondary
(b) Primary

13. We know that a regular pentagon has 5 sides, so we can divide the perimeter by 5 to get the measure of one side.
One side of pentagon is
= 25 cm ÷ 5 cm
= 5 cm.

14. Let the number of rows be 'n'.
Since there are 11 students in a row and number of rows are n.
∴ Rule is given as,
Number of students in the parade = 11n.

15. The two quantities are not in the same units. Therefore we have to convert them into same units.
1.5 m = 1.5 × 100 cm = 150 cm
Therefore, the required ratio is 300: 150

$$= \frac{300}{150} = \frac{2}{1}$$

Required ratio is 2:1.

16. Three symmetrical objects are:
(i)   An electric tube-light
(ii) A water glass
(iii) A fan

17. Steps of construction:

    (1) Draw a line l. Mark a point A on a line l.

    (2) Place the compasses pointer on the 0 mark of the ruler. Open it to place the pencil point up to the 4.5 cm mark.

    (3) Taking caution that the opening of the compasses has not changed, place the pointer on A and swing an arc to cut l at B.

    (4) $\overline{AB}$ is a line segment of required length.
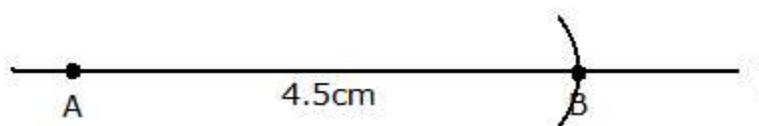
18. Ratio of 30 cm to 4 m

    $= 30 : 4 \times 100 \ (1 \text{ m} = 100 \text{ cm})$

    $= 30 : 400$

    $= 3 : 40$

    Ratio of 20 sec to 6 minutes

    $= 20 : 6 \times 60 \ (1 \text{ min} = 60 \text{ sec})$

    $= 20 : 360$

    $= 1 : 18$

    Since, $3 : 40 \neq 1 : 18$, therefore the given ratio do not form a proportion.

19. To get this answer subtract 27.84 from 84.5

$$\begin{array}{r} 84.50 \\ -27.84 \\ \hline 56.66 \end{array}$$

Hence, 56.66 must be subtracted from 84.5 to get 27.84

20.

Subjects	Number of Students	Tally
English	10	𝍷𝍷𝍷𝍷𝍷 𝍷𝍷𝍷𝍷𝍷
Hindi	8	𝍷𝍷𝍷𝍷𝍷 |||
Math	17	𝍷𝍷𝍷𝍷𝍷 𝍷𝍷𝍷𝍷𝍷 𝍷𝍷𝍷𝍷𝍷 ||
Science	12	𝍷𝍷𝍷𝍷𝍷 𝍷𝍷𝍷𝍷𝍷 ||

21. The shaded portion is made up of line segments. It is covered by full and half squares. We have to calculate the number of fully filled and half filled squares.

⇒ Fully filled squares = 6

⇒ half filled squares = 2

Area covered by fully filled square = 6 x 1 = 6 sq. units.

Area covered by half filled square

$$= 2 \times \frac{1}{2} = 1$$

Therefore, total area = 6 + 1 = 7 sq. units

22. Variables are: x, z, a, b, t, s

Constants are: 4, -1, 3

23. Cost of 9 pens = Rs 135

Cost of 1 pen = Rs $\frac{135}{9}$ = Rs 15

∴ Cost of 16 pens = Rs 15 x 16 = Rs 240

Thus, 16 pens cost Rs 240

24. Drawing the relational part the images become as follows:
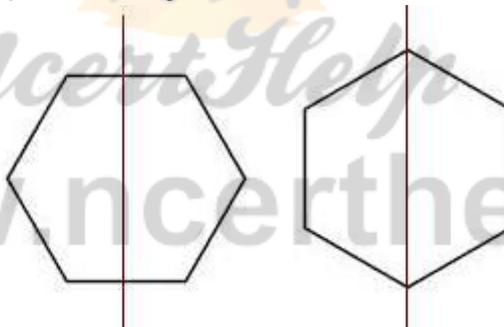
Section C

25. Let the marks of Rohit, Ajay and Vipul be 4x, 5x and 6x respectively.

Given that Ajay's marks = 75

⇒ 5x = 75

$x = \frac{75}{5} = 15$ marks

∴ Marks of Rohit = 4x = 4 x 15 = 60 marks

Marks of Vipul = 6x = 6 × 15 = 90 marks.

26. (a) Introductory Economics has the most students enrolled.

(b) From lowest to highest: Physics, Chemistry, Psychology, Political Science, Economics.

(c) From ratio of the number of students enrolled in Economics to the number enrolled in Chemistry we can state that enrollment in Economics is 2 times larger than in Chemistry.

27. Steps of construction:
1. Draw a circle with centre O and any radius and make a chord AB.
2. Taking O as a centre and a suitable radius, draw an arc which cut the chord AB at two points X and Y.
3. Taking X and Y as centre and same radius draw two arcs and let them intersect at C.
4. Join OC; name the point of intersection of AB and OC as P.
   Measure AP and PB, we find that AP = PB.
   Hence, the perpendicular from centre divides the chord in two equal parts.
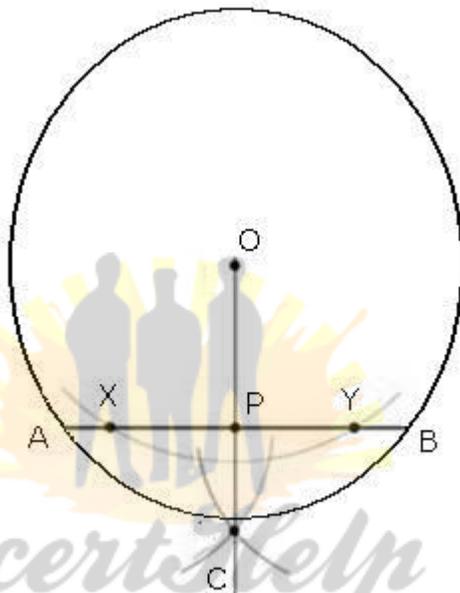
28. Since from the figure the smaller rectangles are equal.
Therefore,
Area of one smaller rectangle = length x breadth
= 3 x 4
= 12 sq. m
Area of 3 smaller rectangles =3 x 12
= 36 sq. m
Area of bigger rectangle = length x breadth
= 10 x 8
= 80 sq. m
Therefore, area of remaining part = 80 - 36
= 44 sq. m