CBSE
Class VI Mathematics
Sample Paper – 1 Solution

Time: 3 hours **Total Marks: 90**

Section A

1. Correct answer: A
   According to the distributive law of multiplication over addition, we have:
   $12 \times (45 + 30) = (12 \times 45) + (12 \times 30)$

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

3. Correct answer: A
   50:90 = 5:9

4. Correct answer: C

5. Correct answer: C
   Cost of 4 pens = 40
   Cost of 1 pen = 40/4 = 10
   Then,
   Cost of 11 pens = 11 × 10 = 110

6. Correct answer: B
   n divided by 5 = $\frac{n}{5}$
   8 subtracted from the result = $\frac{n}{5}$ - 8

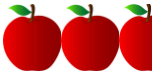
7. Correct answer: A
   Area of square = $(\text{side})^2 = p^2$

8. Correct answer: C
   Isosceles triangle

9. Correct answer: A
   $\frac{5}{3} = 1\frac{2}{3}$

10. Correct answer: D
A region in the interior of a circle enclosed by an arc on one side and a pair of radii on the other two sides is called a sector of the circle.

11. Correct answer: A
On the given number line, from 8, move five steps towards the left.
Thus, the number line represents 8 - 5 = 3.

12. Correct answer: D
One = 10 apples
 = 10 + 10 + 5 = 25 apples

13. Correct answer: D

14. Correct Answer: C

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

16. Correct Answer: A
A triangle is a polygon with three vertices. Hence, Figure 1 is a polygon with three vertices.

Section B

17. x + 6 =15
x = 15 – 6 =9

18. Anna is 7 feet above sea level.
She jumps 3 feet down and walks another 2 feet down. Total distance travelled downwards = 3 + 2 = 5 feet.

19. (a) Total number of students = 9 + 3 + 6 + 12 = 30.
(b) Bus is used by the highest number of students.

20. (a) 14 + (10 – 3)
(b) 23 × 2 – (11 + 15)

21. (-13) + (-19) + (+15) + (-10)
= -13 -19 +15 - 10
= -13 -19 - 10 + 15
= -42 + 15
= - 27

22. Since the window frame is in a rectangular shape.

Perimeter of window = 2 (l + b)

= 2 (20 + 25)

= 2 (45)

= 90 m.

Therefore, the length of wooden strip required = 90 m.

23. In the expression (− 2a + 3b + 5), substitute a = −3 and b = 4 and we get:
-2 (-3) + 3(4) + 5 = 6 +12+5 = 23

24.
100 glasses are filled using 15 liters of juice.
350 glasses will be filled using

$= \frac{350 \times 15}{100}$ litres of juice

$= 17.5 \times 3$

$= 52.5$ litres

25.
Let the fourth term be *x*.

21:7::9:*x* or 21:7= 9:*x*

Product of means = Product of extremes

21 × *x* = 7 × 9

x = 63 ÷ 21

x = 3

26. Length of the bed sheet = 2.5 m

Breadth of the bed sheet = 2 m

Area of the bed sheet = length × breadth

= 2.5 × 2

= 5 m^2

Section C

27.

Cost of notebook = $Rs.8\frac{3}{4} = Rs.\frac{(8\times4)+3}{4} = Rs.\frac{35}{4}$

Cost of pen = $Rs.\ 10\frac{2}{5} = Rs.\ \frac{(10\times5)+2}{5} = Rs.\frac{52}{5}$

LCM of 4 and 5 = (2 × 2 × 5) = 20

Total cost of both the items =

$= Rs.\left(\frac{35}{4}+\frac{52}{5}\right)$

$= Rs.\left(\frac{35\times5\ +\ 52\times4}{20}\right)$

$= Rs.\left(\frac{175\ +\ 208}{20}\right)$

$= Rs.\frac{383}{20}$

$= Rs.19\frac{3}{20}$

28. No. of girls in the class = 35
No. of boys in the class = 45
Total number of students = 35 + 45 = 80
Ratio of boys to girls = 45:35 = 9:7 (dividing by 5)
Ratio of boys to total number of students = 45:80 = 9:16

29. Let the number of triangles be *n.*
For 1 triangle:Number of sticks = 2 × 1 + 1 = 3 sticks
For 2 triangles:Number of sticks = 2 × 2 + 1 = 5 sticks
∴ Number of sticks used = 2 × *n* + 1

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

Given that Ajay's marks = 75

$\Rightarrow 5x = 75$

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

$\therefore$ Marks of Rohit = 4x = 4 × 15 = 60 marks.
Marks of Vipul = 6x = 6 × 15 = 90 marks.

31. The angles are as shown below:

(i) Acute angles $\angle KOL; \angle JOK; \angle NOM$

(ii) Obtuse angles $\angle NOK; \angle MOJ; \angle MOL$

(iii) Straight angles - $\angle NOL; \angle MOK$

32. LCM of 3, 6, 9, 12 = (3 × 2 × 3 × 2) = 36
So, we convert each one of given fractions into an equivalent fraction having 36 as denominator.
Now,

$\frac{2}{3} = \frac{2 \times 12}{3 \times 12} = \frac{24}{36}$

$\frac{1}{6} = \frac{1 \times 6}{6 \times 6} = \frac{6}{36}$

$\frac{5}{9} = \frac{5 \times 4}{9 \times 4} = \frac{20}{36}$

$\frac{7}{12} = \frac{7 \times 3}{12 \times 3} = \frac{21}{36}$

Clearly,

$\frac{6}{36} < \frac{20}{36} < \frac{21}{36} < \frac{24}{36}$

Hence, $\frac{1}{6} < \frac{5}{9} < \frac{7}{12} < \frac{2}{3}$

The given fractions in ascending order are $\frac{1}{6}, \frac{5}{9}, \frac{7}{12}, \frac{2}{3}$.

33. Let the breadth of the rectangular field be x.

Therefore, its length will be 2x.

As per given in question,

Perimeter = 180 m

$\Rightarrow 2(\text{length} + \text{breadth}) = 180$ m

$\Rightarrow 2(x + 2x) = 180$ m

$\Rightarrow 2(3x) = 180$ m

$\Rightarrow 6x = 180$ m

$\Rightarrow x = 30$ m.

Thus, its breadth = 30 m and its length = $2 \times 30 = 60$ m.

34. Let Vivek's commission be Rs. x.
Because the number of books sold by each of them are in proportion to the commision each recieves, we have
50:110 :: 15:x
Product of extreme tems = 50x
Product of middle terms = $110 \times 15 = 1650$
$\therefore 50x = 110 \times 15$
$\therefore 50x = 1650$
$\therefore x = 1650/50 =$ Rs. 33

35.

2	33660
2	16830
3	8415
3	2805
5	935
11	187
17	17
	1

The prime factorization of 33,660 is $2 \times 2 \times 3 \times 3 \times 5 \times 11 \times 17$.

The difference between 17 and 2 is 15.

36.

No. of girls in the class = 35

No. of boys in the class = 45

Total number of students = 35 + 45 = 80

a) Ratio of boys to girls = 45:35 = 9:7 (dividing by 5)

b) Ratio of boys to total number of students = 45:80

= 9:16 (dividing by 5)

Section D

37. Cost of one frock = Rs. 578.75

Cost of one toy = Rs. 309.00

Cost of one bag = Rs. 1862.85

Total cost:

Rs. 578.75
Rs. 309.00
+ Rs. 1862.85
Rs. 2750.60

Total cash in hand = Rs. 3000.00

Total money spent = Rs. 2750.60

Balance:

Rs.3000.00
– Rs.2750.60
Rs. 249.40

Hence, the money left with Monika = Rs. 249.40

38. From the figure, the smaller rectangles are found to be equal.

Therefore ,

Area of one smaller rectangle = length × breadth

= 3 × 4

= 12 m^2

Area of 3 smaller rectangles = 3 × 12

= 36 m^2

Area of bigger rectangle = length x breadth

= 10 × 8

= 80 m^2

Therefore, the area of remaining part = 80 - 36

= 44 m^2

39.

Cost of a pen = Rs $6\frac{2}{3} = Rs\frac{(6\times3)+2}{3} = Rs\frac{20}{3}$

Cost of a pencil = Rs $4\frac{1}{6} = Rs\frac{(4\times6)+1}{6} = Rs\frac{25}{6}$

Now, converting to like fractions

$Rs\frac{20\times2}{3\times2} = \frac{40}{6}$

Clearly, $\frac{40}{6} > \frac{25}{6}$ so, $Rs\,6\frac{2}{3} > Rs\,4\frac{1}{6}$

Hence, the cost of pen is more than the cost of pencil.

Difference between their cost =

$Rs\left(\frac{40}{6} - \frac{25}{6}\right)$

$= Rs\left(\frac{40-25}{6}\right)$

$= Rs\frac{15}{6}$

$= Rs\,2\frac{3}{6}$

$= Rs\,2\frac{1}{2}$

Hence, the cost of pen is more than cost of pencil by.Rs. $2\frac{1}{2}$

40. (a) Introductory Economics has the most students enrolled.
(b) From lowest to highest: Physics, Chemistry, Psychology, Political Science and Economics.
(c) Difference in the number of students taking Economics and Physics = 340 – 140 = 200.

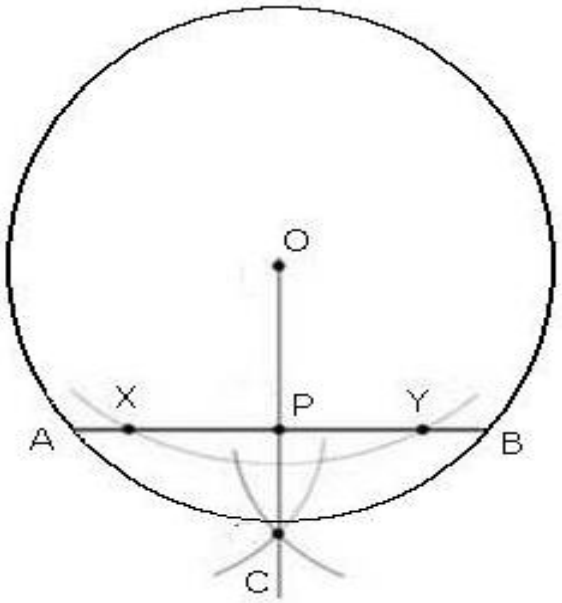
41. (i) Scalene triangle. Because none of the angles are equal, none of the sides will also be equal. Hence, it is a scalene triangle.

(ii) Right-angled triangle. Because the given angle is 90°, it is a right-angled triangle.

(iii) Equilateral triangle. Because all the sides of the given triangle are equal, it is an equilateral triangle.

(iv)Isosceles right-angled triangle. Since two sides are equal (XY = YZ) and one angle is 90°, it is an isosceles right-angled triangle.

42.



1. Draw a circle with centre O and any radius and make a chord AB.
2. Taking O as a centre and suitable radius, draw an arc which cuts the chord AB at two points X and Y.
3. Taking X and Y as the 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.

Measuring AP and PB, we find that AP = PB.
Hence, the perpendicular from the centre divides the chord into two equal parts.