CBSE Board
Class VI Mathematics
Term II
Sample Paper 2

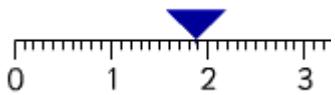
Time: 2 ½ hours | Total Marks: 80

General Instructions:

1. **All** questions are **compulsory**.
2. **Section A** comprises of **12** questions carrying 1 mark each.
3. **Section B** comprises of **12** questions carrying 2 marks each.
4. **Section C** comprises of **8** questions carrying 3 marks each.
5. **Section D** comprises of **5** questions carrying 4 marks each.

Section A
(Questions 1 to 12 carry 1 mark each)

1. Decimal number represented by point A on the number line is_____



A. 1.10
B. 1.7
C. 1.8
D. 1.9

2. Read the following table:

Favorite Game	
Name of game	Number of students
Cricket	𝍸 𝍸 𝍸 𝍸 ||
Football	𝍸 𝍸 |||
Hockey	𝍸 𝍸 ||||
Basketball	𝍸 |||
Volley ball	𝍸

Difference between the students who like hockey and football is:

A. 4
B. 3
C. 2
D. 1

3. The side of a square with perimeter 70 m is

A. 17 m
B. 280 m
C. 17.5 m
D. 16 m

4. If the cost of one book is Rs. 10 then the cost of n such books will be

A. 10 + n
B. 10n
C. 10 – n
D. n

5. In 3 : 4 :: x : 8, find x.

A. 3
B. 6
C. 5
D. 4

6. A rectangle has _____ lines of symmetry.

A. 2
B. 3
C. 1
D. Zero

7. If 6k represents the cost of k chocolates then the cost of 5 chocolates is:

A. Rs. 30
B. Rs. 20
C. Rs. 35
D. Rs. 20

8. 8.6 when written as a fraction in mixed fraction form is

A. $8\frac{6}{10}$
B. $\frac{86}{10}$
C. $\frac{43}{5}$
D. $\frac{86}{100}$

9. The value of expression 4y + 12 at y = 1 is

E. 12
F. 16
G. 15
H. 18

10. Alphabet H has _____ line/s of symmetry.

A. 2
B. 3
C. 1
D. zero

11. "9k + 1" is same as:

A. 9 multiplied to 1 and then k is added
B. 9 multiplied to k and then 1 is added
C. k multiplied to 1 and then 9 is added
D. 9 multiplied to k and 1 is added to k

12. Choose the smaller decimal number.

A. 0.1258
B. 0.1254
C. 0.1257
D. 0.1259

Section B

(Questions 13 to 24 carry 2 marks each)

13. The weight of an empty gas cylinder is 18 kg 75 g. The weight of the gas contained in it is 12 kg 350g. What is the total weight of the cylinder filled with gas?

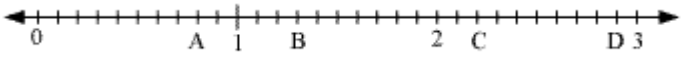
14. There are four divisions in class VI of a school. Standard VI-A has 10 girls and 12 boys. Standard VI-B has 6 girls and 20 boys. Standard VI-C has 18 girls and 12 boys. Standard VI-D has 16 girls and 24 boys.

a. Tabulate the data.
b. Count the total number of boys and girls from each section.

15. Three sides of a quadrilateral are 30 cm, 40 cm and 25 cm. Find the length of its fourth side if the perimeter is 130cm.

16. Balls are to be transferred from larger boxes into smaller boxes. When a large box is emptied, the balls from it fill two smaller boxes and still 10 balls remains outside. If the number of balls in a small box is taken to be x, what is the number of balls in the larger box?

17. Write the decimal number represented by the points A, B, C, D on the given number line?



18. Length and breadth of a rectangular field are 20 m and 15 m respectively. Find the ratio of the breadth to the length of the field.

19. Draw any line segment AB. Mark any point P on it. Through P, draw a perpendicular to AB. (Use ruler and compasses only)

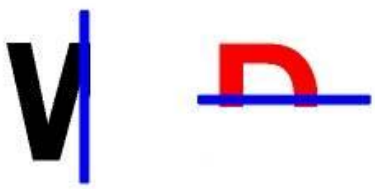
20. What is to be added to 74.5 to get 91?

21. Express each of the following as an algebraic expression.

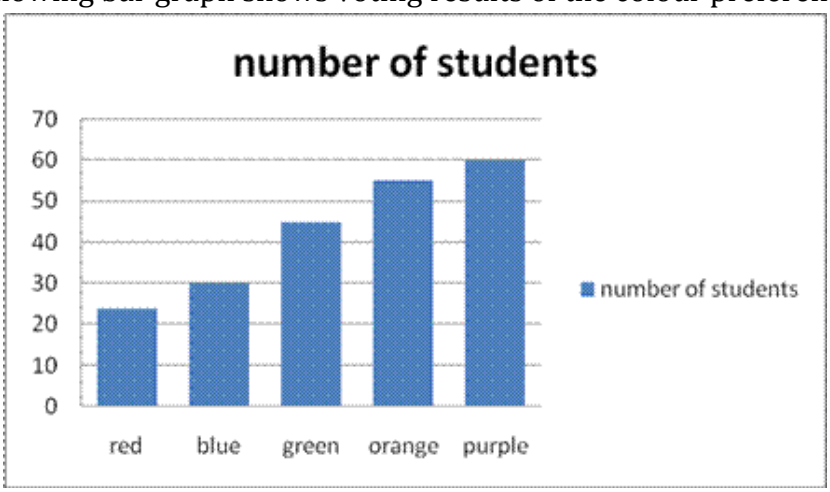
a. Sum of y and 7.

b. Number a divided by 23.

22. Complete the following alphabets whose one half and axis of symmetry is given.



23. The following bar graph shows voting results of the colour preference of students.



(a) How many students choose blue as their favorite colour?

(b) How many more students chose green colour than red?

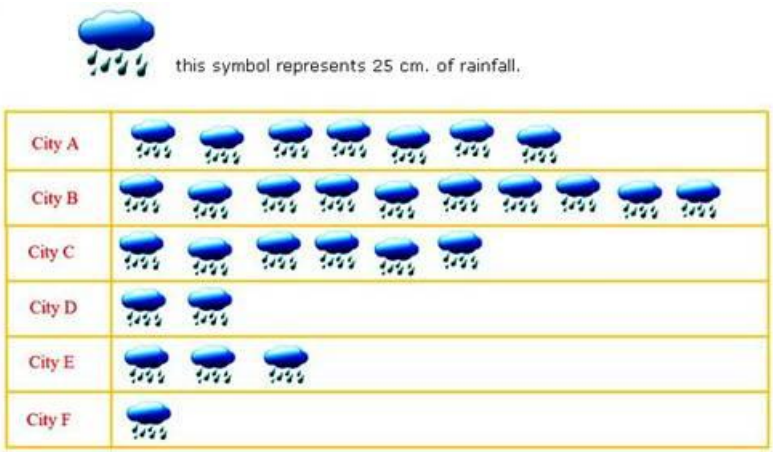
24. A bus travels at v km per hour. It is going from Delhi to Mumbai. After the train has travelled 15 hours, Mumbai is still 80km away. What is the distance from Delhi to Mumbai? Express it using v.

Section C

(Questions 25 to 32 carry 3 marks each)

25. There are 3 different coloured balls in a bucket. The total number of balls is 55. If the number of blue balls is 25 and others are in a ratio of 2 : 1. Find the number of other two balls. Also, find the ratio of the sum of numbers of the other two to the blue balls.

26. There is a pictograph showing rainfall in cm of different cities named (A, B, C, D, E and F) during the current year. On the basis of this pictograph answer the following questions.



1. In which city did maximum rainfall occur?
2. In which city did minimum rainfall occur?
3. The city A recorded how much more rainfall than the city F.

27. Draw a right angle triangle right angled at B. Construct perpendicular bisectors of sides AB and BC, locate the point where they intersect.

28. Sachin wants to cover the floor of a room 16 m wide and 15 m long with rectangular tiles of 1.5 m long and 1m wide. Find the number of tiles required to cover the floor.

29. There are 35 girls and 45 boys in the class. Find the ratio of

a) Number of boys to the number of girls

b) Number of boys to the total number of students.

30. Rahul wants to paint all the four square walls of his room of side 10 m. If the cost of painting is Rs. 20 per sq. m then what will be the total cost of painting?

31. The length of a rectangular field is twice its breadth. Its perimeter is 180 m. Find its length and breadth.

32. Shrehan is 6 years older than Jasmine. If the sum of their ages is 30, then what are their ages?

Section D

(Questions 33 to 37 carry 4 marks each)

33. Draw a circle of any radius and a chord AB in it. Construct a perpendicular from centre to the chord. Does this perpendicular divide the chord in equal parts?

34. The marks obtained by Kunal in his annual examinations are as shown below:

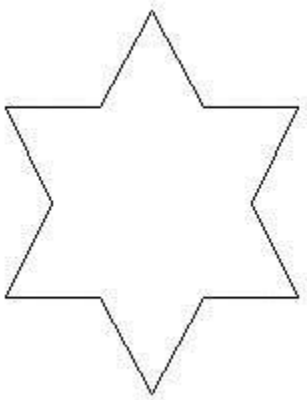
Subject	Hindi	English	Mathematics	Science	Social Studies
Marks	63	75	90	72	58

Draw a bar graph to represent above data.

35.

A. Find the measure of $\overline{MN}$ if M is between K and N, $\overline{KM} = 2x - 4$, $\overline{MN} = 3x$ and $\overline{KN} = 26$.

B. Draw the maximum number of lines of symmetry of the following figure:



36. Express the following as algebraic equation and solve:
(a) Twice a number increased by 6 is 101. What is the number?
(b) Six times a number decreased by 3 is 9. Find the number.

37. Rohit runs around a triangular field of side 30 m each and Mohit runs around a square field of side 25 m. Who covers more distance and by how much?

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Sample Paper 2 – Solution

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Section A

1. Correct answer: D
Decimal number represented by point A on the number line is 1.9

2. Correct answer: D
Number of students who like hockey = 14
Number of students who like football = 13
Difference = 14 – 13 = 1

3. Correct answer: C
Perimeter of a square = 4 × side
70 = 4 × side
Side = $\frac{70}{4}$ = 17.5 m

4. Correct answer: B
Cost of n such books will be 10n.

5. Correct answer: B
3 : 4 :: x : 8
$\frac{3}{4} = \frac{x}{8}$
Gives, 4x = 24 $\Rightarrow$ x = 6

6. Correct answer: A
A rectangle has two lines of symmetry.

7. Correct answer: A
Cost of k chocolates = 6k
Then, cost of 5 chocolates = 6 × 5 = Rs. 30

8. Correct answer: A
The given number 8.6 can be written as

$$8.6 = \frac{86}{10} = \frac{80+6}{10}$$
$$= \frac{80}{10} + \frac{6}{10}$$
$$= 8 + \frac{6}{10}$$
$$= 8\frac{6}{10}$$

9. Correct answer: B
Value at y = 1 is 4(1) + 12 = 16

10. Correct answer: A
Alphabet H has 2 lines of symmetry

11. Correct answer: B
9 multiplied to k and then 1 is added.

12. Correct answer: B
0.1254 < 01257 < 0.1258 < 01259

Section B

13. Weight of an empty cylinder = 18.075 kg
Weight of the gas filled in it = 12.350 kg
Total weight =

$$\begin{array}{r} 18.075\text{kg} \\ 12.350\text{kg} \\ \hline 30.425\text{kg} \end{array}$$

Hence, the total weight of the cylinder filled with gas = 30.425 kg = 30 kg 425 g

14. This data can be represented in a tabular form as shown below:

Standard VI	Girls	Boys	Total
Div A	10	12	22
Div. B	6	20	26
Div. C	18	12	30
Div. D	16	24	40
Total	50	68	118

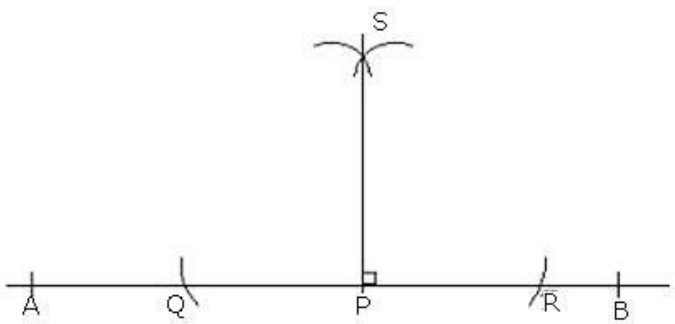
15. Let the length of the fourth side be x cm.
Perimeter = 130 cm
30 + 40 + 25 + x = 130 cm
95 + x = 130 cm
x = 130 – 95
x = 35 cm
Therefore, length of the fourth side is 35 cm.

16. Number of ball in smaller boxes = x
Number of balls in the larger box = 2 × number of balls in small Box + balls left over
= 2x + 10

17. Point A represents 0.8
Point B represents 1.3
Point C represents 2.2
Point D represents 2.9

18. Length of rectangular field = 20 m
Breadth of the rectangular field = 15 m
The ratio of the breadth to the length is 15 : 20
Now, $15:20=\frac{15}{20}=\frac{15\div5}{20\div5}=\frac{3}{4}=3:4$
Thus, the required ratio is 3 : 4.

19. Steps of construction:
1. Draw a line segment AB of any length and mark a point P on it.
2. Taking P as centre and any radius draw two arcs one on left side of P and other on right side of P, which cut AB at Q and R.
3. Taking Q and R as a centre draw two arcs and let them intersect at S.
4. Join PS.
5. PS is the required perpendicular of AB.



20. Subtract 74.5 from 91

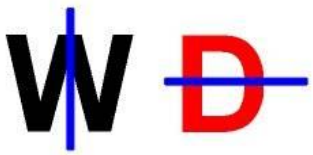
$$\begin{array}{r} 91.0 \\ -74.5 \\ \hline 16.5 \end{array}$$

Hence, 16.5 should be added to 74.5 to get 91.

21. a. y + 7

b. $\frac{a}{23}$

22. The complete image is as below:



23. (a) Number of students whose favourite colour is blue = 30.
(b) Number of students whose favourite colour is green = 45
Number of students whose favourite colour is red = 25
Thus, required number of students = 45 – 2 5 = 20

24. Speed of the bus = v km per hour
Distance travelled by the bus in 10 hours = 10v km
According to the question,
Distance from Delhi to Mumbai
= Distance travelled by bus in 10 hours + 80 km
= 10v km + 80 km
= (10v + 80) km

Section C

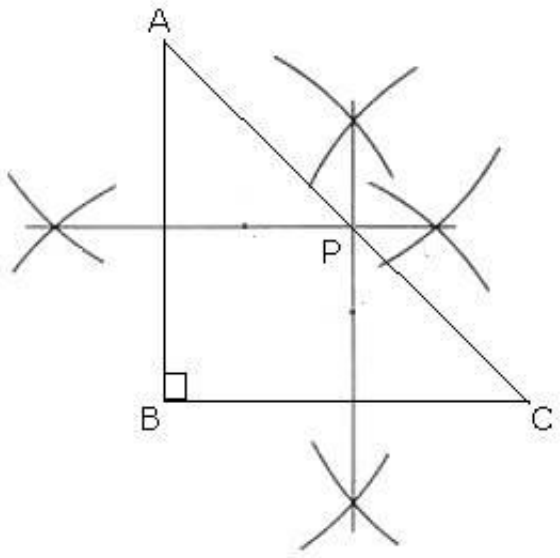
25. Total balls = 55
Blue balls = 25
Remaining balls are = 55 – 25 = 30
Given that remaining balls are in the ratio of 2 : 1.
Let these balls be 2x and 1x respectively.
$\Rightarrow$ 2x + 1x = 30
$\Rightarrow$ 3x = 30 $\Rightarrow$ x = 10
Thus, number of other two balls are
2x = 2 × 10 = 20 and 1x = 1 × 10 = 10
Ratio of sum of other two balls to the blue balls $= \frac{30}{25} = \frac{6}{5} = 6:5$

26.

1. Maximum rainfall occurred in city B, i.e., 25 × 10 = 250 cm
2. Minimum rainfall was in city F that is 25 × 1 = 25 cm
3. Difference between rainfalls of city A and F = (7 – 1) × 25 = 150 cm

27. The steps of construction are as follows:

1. Draw right angle triangle ABC with right angle at B.
2. Construct perpendicular bisectors of sides AB and BC.
3. Let the point of intersection of the perpendiculars be P.
4. By observing this point P lies on hypotenuse AC.



28. Total area of tiles must be equal to the area of the floor of the room.

Length = 15 m and Breadth = 16 m

Area of the floor = length × breadth = 15 × 16 = 240 sq. m

Area of one rectangular tile = length × breadth = 1.5 × 1 = 1.5 sq. m

$\therefore$ Number of tiles required $= \frac{\text{Area of floor}}{\text{Area of one tile}} = \frac{240}{1.5} = 160$

29. Number of girls in the class = 35

Number 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

30. Area of a square wall = side × side = 10 × 10 = 100 sq. m
Area of four square walls = 4 × 100 = 400 sq. m
Cost of painting 1 sq. m of wall = Rs. 20
Therefore, total cost of painting = Rs. 20 × 400 = Rs. 8000

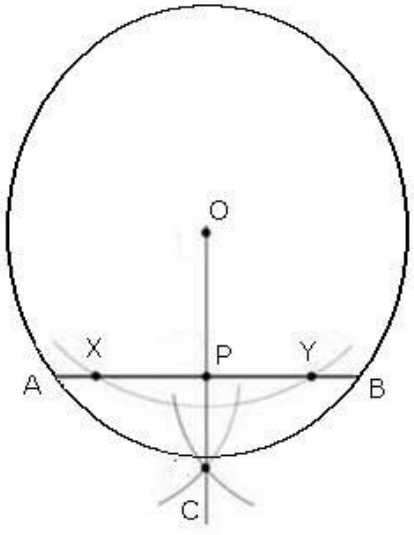
31. Let the breadth of the rectangular field be x.
Therefore, its length will be 2x.
As per given in question,
Perimeter = 180 m
⇒ 2(length + breadth) = 180 m
⇒ 2(x + 2x) = 180 m
⇒ 2(3x) = 180 m
⇒ 6x = 180 m
⇒ x = 30 m
Thus, its breadth = 30 m and its length = 2 × 30 = 60 m

32. Let the age of Shrehan be x years.
Then, age of Jasmine = x + 6 years
Sum of their ages = 30
⇒ x + x + 6 = 30
⇒ 2x + 6 = 30
Subtracting 6 from both sides,
⇒ 2x = 30 – 6
⇒ 2x = 24
⇒ x = 12
Age of Shrehan = 12 years
Age of Jasmine = 18 years

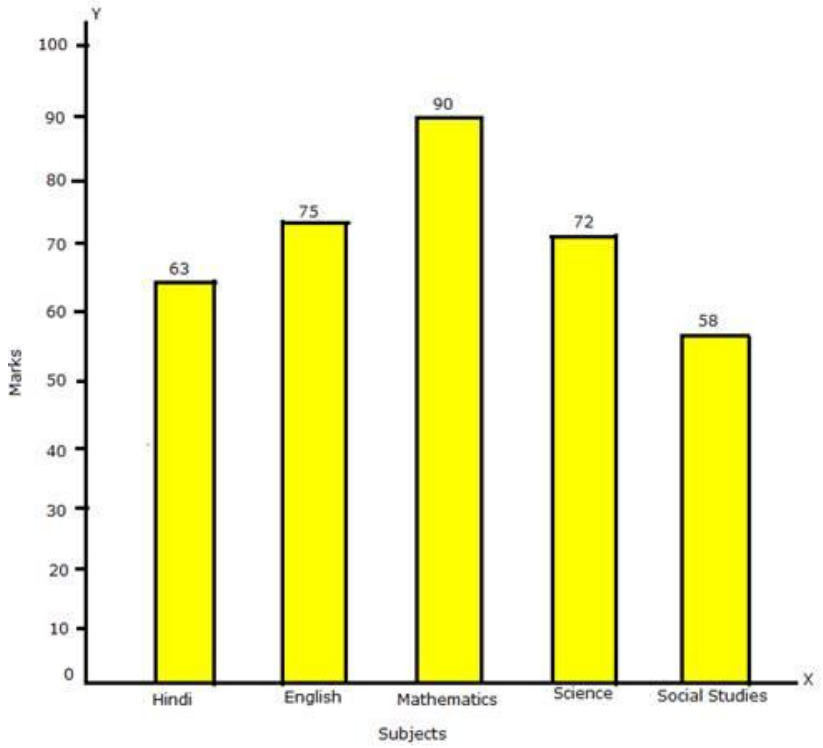
Section D

33. 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.

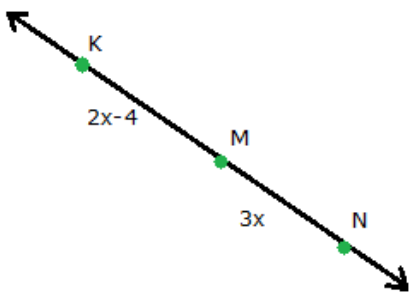


34. The bar graph is as follows:



35.

A. Since M is between K and N, $\overline{KM} + \overline{MN} = \overline{KN}$.



$\overline{KM} + \overline{MN} = \overline{KN}$

$(2x - 4) + 3x = 26$

$5x - 4 = 26$

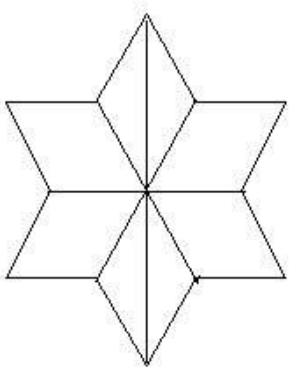
$5x = 30$

$x = 6$

Therefore,

$\overline{MN} = 3x = 3(6) = 18$

B. There can be maximum four lines of symmetry.



36.

a) Let the number be x.
∴ Twice the number = 2x
∴ Equation becomes 2x + 6 = 10
Put x = 1 in L.H.S.,
2 × 1 + 6 = 2 + 6 = 8
Again, put x = 2
2 × 2 + 6 = 4 + 6 = 10.
Thus for x = 2, L.H.S. = R.H.S.
So, the required number is 2.

b) Let the number be x.
∴ L.H.S. = 6x - 3 and R.H.S. = 9
Put x = 1 in L.H.S.,
6 x 1 - 3 = 6 - 3 = 3
Again put x = 2
6 × 2 - 3 = 12 - 3 = 9.
Thus, for x = 2, L.H.S. = R.H.S.
So, the required number is 2.

37. Distance covered by Rohit = perimeter of triangle
= 3 × length of one side
= 3 × 30 m
= 90 m

Distance covered by Mohit = Perimeter of square
= 4 × length of one side
= 4 × 25 m
= 100 m

Difference in the distance covered = 100 m – 90 m = 10 m

Therefore, Mohit covered 10 m more distance than Rohit.