

Maharashtra Board Class VI Mathematics Board Paper – 1 Solution

Q1.

1. $5 \times 5 \times 5 \times 5 = 625$

2. $25 : 45 = \frac{25}{45} = \frac{25 \div 5}{45 \div 5} = \frac{5}{9} = 5 : 9$

3. 50 percent of 84 = $84 \times \frac{50}{100} = \frac{84 \times 50}{100} = \frac{84}{2} = 42$

4. The prime numbers from 1 to 100 are given below.

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89,
and 97.

There are 25 prime numbers between 1 and 100.

5. $48 = 3 \times 16$

$16 = 16 \times 1$

L.C.M. = $16 \times 3 = 48$

6. $12 \times 14 \div 7 = 12 \times 2 = 24$

7. Base 6, index 4 = 6^4

8. $38.974 + 9.408 = 48.382$

9. $0.83 = \frac{83}{100} = 83 \text{ percent}$

10. Given, $l = 12 \text{ cm}$ and $b = 10 \text{ cm}$

Area of the rectangle = $l \times b = 12 \times 10 = 120 \text{ sq. cm}$

11. Radius = $r = 7 \text{ cm}$

Diameter = $2 \times \text{radius} = 2 \times 7 = 14 \text{ cm}$

12. A triangle has 6 exterior angles in all.

Q2.

1. We have,

$$m \angle ABC = 25^\circ \text{ and } m \angle PQR = 107^\circ.$$

$$\Rightarrow m \angle PQR > m \angle ABC$$

Thus, $\angle PQR$ is the bigger angle of the two angles.

2. $p^2 + q^2 = (3)^2 + (5)^2 = 9 + 25 = 34$

3. Given, Length (l) of a rectangle = 30 m, perimeter of a rectangle = 100 m

$$\text{Now, perimeter of a rectangle} = 2(l + b)$$

$$\Rightarrow 100 = 2(30 + b)$$

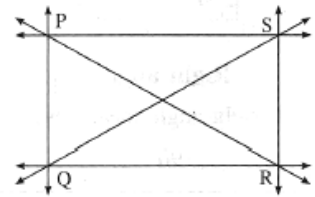
$$\Rightarrow 50 = 30 + b$$

$$\Rightarrow b = 50 - 30 = 20$$

Therefore, the breadth of the rectangular pool is 20 m.

4. (1) The lines whose point of concurrence is Q are lines PQ, SQ and RQ.

(2) Lines PS, SR and QS are concurrent lines.



5. $5 \times [10 + (-13)] = 5 \times [10 - 13] = 5 \times [-3] = -15$

6. In $\triangle RST$, $m \angle R + m \angle S + m \angle T = 180^\circ$

[The sum of the three angles of a triangle will always add up to 180 degrees]

$$\Rightarrow 70^\circ + 30^\circ + m \angle T = 180^\circ$$

$$\Rightarrow 100^\circ + m \angle T = 180^\circ$$

$$\Rightarrow m \angle T = 180^\circ - 100^\circ$$

$$\Rightarrow m \angle T = 80^\circ$$

7. Length of the room (l) = 5.2 m

Breadth of the room (b) = 5 m

$$\text{Area of the room} = l \times b$$

Area of the mat = Area of the room

$$\Rightarrow \text{Area of the mat} = l \times b = 5.2 \times 5 = 26.0 \text{ sq. m}$$

Thus, the area of the mat is 26 sq. m.

8. Radii: Seg CB, Seg CX, Seg CH, Seg CA, Seg CM, Seg CI.

Chords: Seg RG, Seg AH, Seg IH, Seg MX, Seg AB

Diameter: Seg IH, Seg MX, Seg AB.

Q3.

1. Length of the tank (l) = 2.5 m, breadth (b) = 2 m, height (h) = 3 m

$$\text{Volume of the tank} = l \times b \times h = 2.5 \times 2 \times 3 = 15 \text{ cu m}$$

The volume of the water which the tank can hold is equal to the volume of the tank.

Thus, the tank will hold 15 cu m of water.

2. Selling price(S.P.) of 15 shirts = Rs. 2340

$$\text{Loss (L)} = \text{Rs. 60}$$

$$\text{Cost Price (C.P.)} = \text{Selling Price (S.P.)} + \text{Loss (L)}$$

$$\Rightarrow \text{Cost Price (C.P.) of 15 shirts} = 2340 + 60 = \text{Rs. 2400}$$

$$\Rightarrow \text{Cost Price (C.P.) of 1 shirt} = 2400 \div 15 = 160$$

Therefore, the cost of each shirt is Rs. 160.

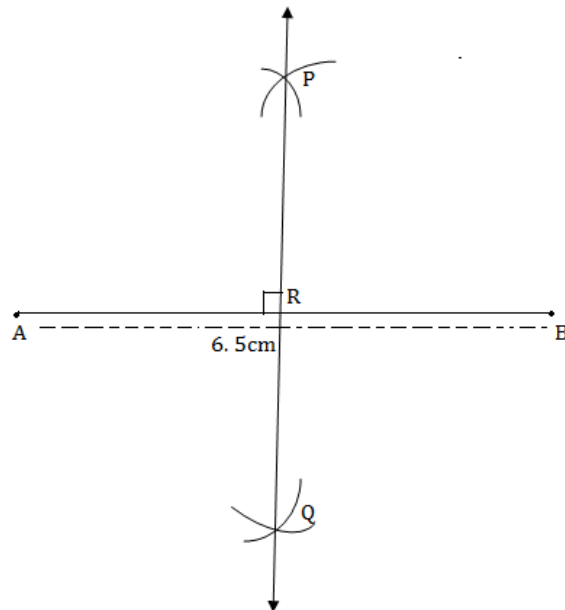
3. Given, length of line segment = 6.5 cm

1. Draw line segment AB of length 6.5 cm.

2. Take the span of the compass more than half of length AB.

3. Keep the steel head of the compass on point 'A' and draw arcs on either side of line AB. Now, keep the steel end of the compass on point 'B' and draw two more arcs to cut the previous arcs at points P and Q, respectively.

4. Join PQ.



Thus, PQ is the perpendicular bisector of line segment AB.

4. $16 \times 81 + 34 \times 81$

$$= 81(16 + 34)$$

$$= 81 \times 50$$

$$= 4050$$

5. Perimeter of a square = $4 \times \text{Side}$

Given, perimeter of the square room = 16 m.

$$\Rightarrow 4 \times \text{Length of side of a square} = 16$$

$$\Rightarrow \text{Length of side of a square} = 16 \div 4 = 4$$

Therefore, the length of each side of a square room is 4 m.

6. $8 : 12 = 2 : x$

$$\Rightarrow \frac{8}{12} = \frac{2}{x}$$

$$\Rightarrow \frac{8}{12} = \frac{4 \times 2}{4 \times 3} = \frac{2}{3}$$

$$\text{Now, } \frac{2}{3} = \frac{2}{x}$$

$$\therefore x = 3$$

7. Given, maximum marks = 800

35% out of 800 marks are required for passing.

$$\therefore 35\% \text{ of } 800 = \frac{35}{100} \times 800 = 280$$

Therefore, 280 marks are required for passing.

Q4.

1. 75 out of 625 means $\frac{75}{625}$.

$$\frac{75}{625} = \frac{75 \div 25}{625 \div 25} = \frac{3}{25}$$

Therefore, $\frac{75}{625}$ and $\frac{3}{25}$ are equivalent fractions.

$$\text{Percentage (the letters were greeting cards)} = \frac{3}{25} = \frac{3 \times 4}{25 \times 4} = \frac{12}{100}$$

Thus, out of the total number of letters, 12% were greeting cards.

2.

$$\frac{784.8}{0.4} = \frac{784.8 \times 10}{0.4 \times 10} = \frac{7848}{4}$$

$$\begin{array}{r} 1962 \\ 4 \overline{) 7848} \\ \underline{-4} \\ 38 \\ \underline{-36} \\ 024 \\ \underline{-24} \\ 008 \\ \underline{-8} \\ 0 \end{array}$$

Thus, $784.8 \div 0.4 = 1962$.

3. Cost Price of 50 apples (C.P.) = Rs. 260

Selling price of 50 apples (at Rs. 5 per apple) = $50 \times 5 =$ Rs. 250

If selling price is less than the cost price, there is a loss in this transaction.

Thus, Loss = Cost price – Selling price = $260 - 250 = 10$

Thus, Hanif has a loss of Rs. 10.

4. Length of the first playground (l_1) = 120 m

Breadth of the first playground (b_1) = 52 m

\therefore Area of the first playground = $l_1 \times b_1 = 120 \times 52 = 6240$ sq. m

Length of the second playground (l_2) = 110 m

Length of the second playground (b_2) = 62 m

\therefore Area of the second playground = $l_1 \times b_1 = 110 \times 62 = 6820$ sq. m

Now, $6820 > 6240$.

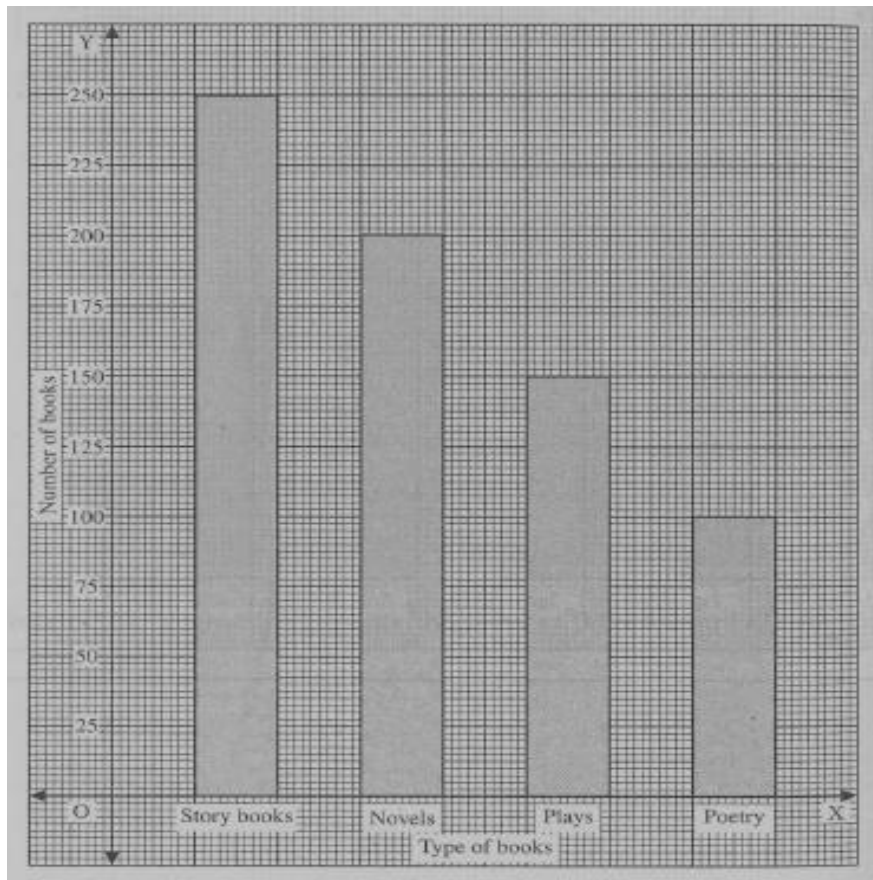
\Rightarrow Area of the second playground > Area of the first playground

Thus, the playground which is 110 m long and 62 m wide is bigger.

Q5.

1.

- (a) Draw a horizontal line as x-axis and draw a vertical line at right angle to the x-axis, on the graph paper after leaving a specific space.
- (b) Show 'Types of books' on x-axis.
- (c) Show 'Numbers of books' on y-axis.
- (d) On y-axis, 1 cm = 25 books.
- (e) On x-axis, leave 1 cm box and draw 1st bar of 5 cm width. Same way, draw other bars.
- (f) Keep equal distance between each box.



2. Given: Length of the rectangle (l) = 50 cm

Breadth of the rectangle (b) = 30 cm

Length of the wire = Perimeter of the rectangle

Perimeter of the rectangle = $2(l + b) = 2(50 + 30) = 2(80) = 160$ cm

\therefore the length of the wire is 160 cm.

Now, the wire is bent into a square.

\therefore Perimeter of a square = 160 m

Perimeter of a square of side 'a' = $4a$

$\therefore 4 \times a = 160$

$\Rightarrow a = 160 \div 4 = 40$

Thus, the length of each side of a square is 40 cm.