



Exercise 4A

Question 5:

$\triangle ABC$ and $\triangle PQR$ are similar triangles, therefore corresponding sides of both the triangles are proportional.

$$\text{So, } \frac{\text{Perimeter of } \triangle ABC}{\text{Perimeter of } \triangle PQR} = \frac{AB}{PQ}$$

$$\text{Let, } AB = x \text{ cm}$$

$$\text{Then, } \frac{x}{12} = \frac{32}{24}$$

$$x = \frac{32 \times 12}{24} = 16 \text{ cm}$$

Hence, $AB = 16 \text{ cm}$

Question 6:

$\triangle ABC$ and $\triangle DEF$ are two similar triangles, therefore corresponding sides of both the triangles are proportional.

Hence,

$$\frac{\text{Perimeter of } \triangle ABC}{\text{Perimeter of } \triangle DEF} = \frac{BC}{EF}$$

Let perimeter of $\triangle ABC = x \text{ cm}$

$$\therefore \frac{x}{25} = \frac{9.1}{6.5}$$

$$x = \frac{9.1 \times 25}{6.5} = 35 \text{ cm}$$

Hence, perimeter of $\triangle ABC = 35 \text{ cm}$

Question 7:

We know that $CD \parallel AB$ in trap $ABCD$ and its diagonals intersect at O . Since the diagonals of a trapezium divide each other proportionally therefore, we have

$$\frac{AO}{OC} = \frac{BO}{OD} \quad (\text{by thales theorem})$$

$$\Rightarrow \frac{5x-7}{2x+1} = \frac{7x+1}{7x-5}$$

$$\Rightarrow (5x-7)(7x-5) = (7x+1)(2x+1)$$

$$\Rightarrow 35x^2 - 25x - 49x + 35 = 14x^2 + 7x + 2x + 1$$

$$\Rightarrow 35x^2 - 14x^2 - 25x - 49x - 7x - 2x + 35 - 1 = 0$$

$$\Rightarrow 21x^2 - 83x + 34 = 0$$

$$\therefore x = \frac{83 \pm \sqrt{(83)^2 - 4 \times 21 \times 34}}{21 \times 2}$$

$$= \frac{83 \pm \sqrt{4033}}{42}$$

$$= \frac{83 \pm 63.51}{42}$$

$$= \frac{146.51}{42} \text{ or } \frac{19.49}{42}$$

$$= 3.49 \text{ or } 0.46$$

$$\Rightarrow x = 0.46 \text{ or } 3.49,$$

But $x \neq 0.46$ as all sides should be positive.

$$\therefore x = 3.49 \text{ cm}$$

***** END *****