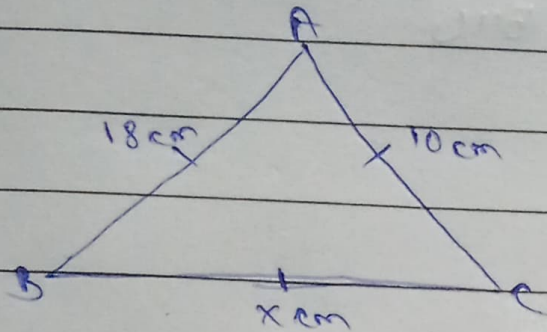


# WORKSHEET

4



Given, Perimeter = 49 cm.

$$\Rightarrow 18 + 10 + x = 49 \text{ cm.}$$

$$\Rightarrow 28 + x = 49 \text{ cm.}$$

$$\Rightarrow x = 49 - 28 = 14 \text{ cm.}$$

$\therefore$  Hence,  $BC = 14 \text{ cm}$

Area of the triangle,  $\Rightarrow \frac{18 + 14 + 10}{2}$

$$\Rightarrow \frac{42}{2} = 21 \text{ cm.}$$

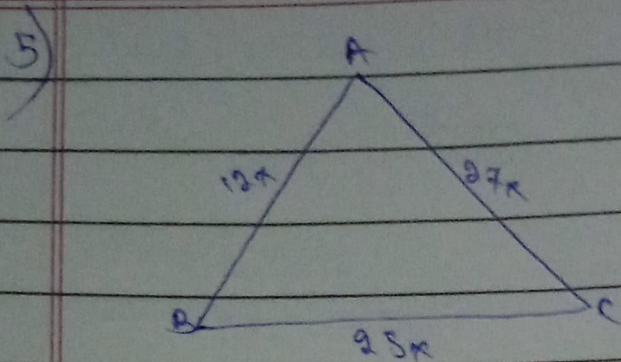
$$\Rightarrow \sqrt{21(21-18)(21-14)(21-10)}$$

$$\Rightarrow \sqrt{21 \times 3 \times 7 \times 11}$$

$$\Rightarrow \sqrt{3 \times 7 \times 3 \times 7 \times 11}$$

$$= 3 \times 7 \sqrt{11}$$

$$= 21\sqrt{11} \text{ cm}^2$$



$$\text{Perimeter} = 540 \text{ cm}$$

$$\Rightarrow 12x + 17x + 25x = 540$$

$$\Rightarrow 54x = 540 \text{ cm}$$

$$\Rightarrow x = \frac{540}{54} = 10 \text{ cm}$$

$$12x = 12 \times 10 \Rightarrow 120 \text{ cm}$$

$$17x = 17 \times 10 \Rightarrow 170 \text{ cm}$$

$$25x = 25 \times 10 \Rightarrow 250 \text{ cm}$$

Area =

$$\text{Semi perimeter} = \frac{250 + 170 + 120}{2}$$

$$= \frac{540}{2} = 270$$

$$\Rightarrow \sqrt{270(270-250)(270-170)(270-120)}$$

$$\Rightarrow \sqrt{270 \times 20 \times 100 \times 150}$$

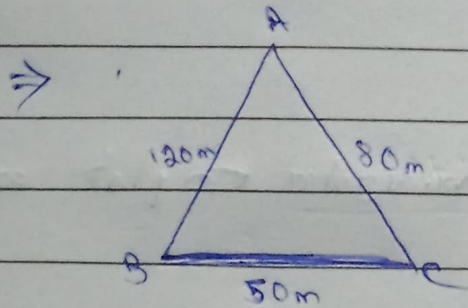
$$\Rightarrow \sqrt{3 \times 3 \times 3 \times 2 \times 5 \times 2 \times 5 \times 2 \times 5 \times 5 \times 5 \times 5 \times 3 \times 2 \times 5}$$

$$\Rightarrow 3 \times 2 \times 2 \times 3 \times 5 \times 5 \times 5 \times 5$$

$$\Rightarrow 3600 \text{ cm}^2$$

### Example 2

ans- A triangular ABC has sides 120m, 80m, 50m.



⇒ Area of triangle =  $\frac{120 + 80 + 50}{2}$

S ⇒  $\frac{250}{2} = 125m$ .

⇒  $\sqrt{125(125-120)(125-80)(125-50)}$

⇒  $\sqrt{125 \times 5 \times 45 \times 75}$ .

⇒  $\sqrt{5 \times 5 \times 5 \times 5 \times 5 \times 3 \times 3 \times 5 \times 5 \times 3}$

⇒  $5 \times 5 \times 5 \times 3\sqrt{15}$

⇒  $375\sqrt{15} m^2$

As we have to fence all around it, we will take perimeter.

Perimeter = AB + AC + BC.

= 120 + 80 + 50

⇒ 250m.

Given that we have leave 3m for gate

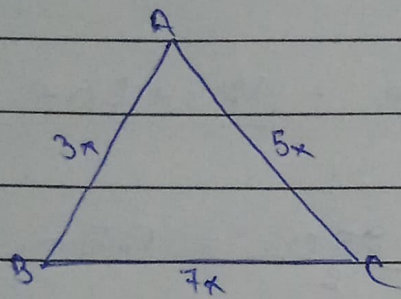
⇒ 250m - 3m

⇒ ~~250~~ 247m.

$$\begin{aligned} \text{Now cost of fencing} &= 2247 \times 220 \\ &\Rightarrow 24940 /- \end{aligned}$$

Ex - 3

~~ans~~ Given that sides of the triangular ~~plot~~ plot are in the ratio 3:5:7.



Then we know that Perimeter = 300m

$$\Rightarrow 3x + 5x + 7x = 300m$$

$$\Rightarrow 15x = 300m$$

$$\Rightarrow x = \frac{300}{15} = 20m$$

So sides of triangle are  $3 \times 20$ ,  $5 \times 20$ ,  $7 \times 20$   
 $\Rightarrow 60m, 100m, 140m$

$$\Rightarrow 60m + 100m + 140m$$

$$\Rightarrow \frac{300}{2} = 150m$$

$$= \sqrt{150(150-140)(150-100)(150-60)}$$

$$\Rightarrow \sqrt{150 \times 10 \times 50 \times 90}$$

$$\Rightarrow \sqrt{3 \times 3 \times 2 \times 3 \times 2 \times 5 \times 5 \times 2 \times 3 \times 3 \times 2 \times 5}$$

$$\Rightarrow 3 \times 3 \times 2 \times 5 \times 2 \times 5 \sqrt{3}$$

$$\Rightarrow 1800 \sqrt{3} \text{ m}^2$$