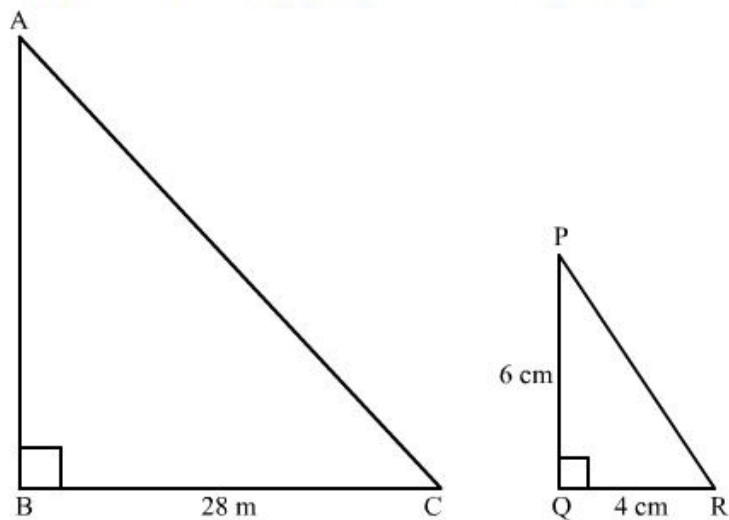Triangles Ex 4.5 Q24

Answer :

It is given that length of vertical stick $= 6m$

We have to find the height of the tower.

Suppose AB is the height of the tower and BC is its shadow.

Now, $\triangle ABC \sim \triangle PCR$ $\angle B = \angle Q$ and $\angle A = \angle P$

$$\frac{AB}{BC} = \frac{PQ}{QR}$$

$$\frac{AB}{28}\,m = \frac{6}{4}\,m$$

$$\Rightarrow AB = \frac{28m \times 6m}{4m}$$

$$\Rightarrow AB = 42m$$

Hence the height of the tower is $\boxed{42m}$.

Triangles Ex 4.5 Q25

Answer :

It is given that ACB is right angle triangle and $\angle C = 90^0$

We have to prove that $\triangle ABC \sim \triangle ADE$ and find the lengths of AE and DE.

In $\triangle ABC \sim \triangle ADE$,

$\angle A = \angle A$ Common $\angle C = \angle E$ $90°$

So by AA similarly criterion, we have

$\triangle ABC \sim \triangle ADE$

$\Rightarrow \dfrac{AB}{AD} = \dfrac{BC}{DE} = \dfrac{AC}{AE}$

$\Rightarrow \dfrac{13cm}{3cm} = \dfrac{12cm}{DE} = \dfrac{5cm}{AE}$

Since

$$AB^2 = AC^2 + BC^2$$
$$= 5^2 + 12^2$$
$$= 13^2$$

So $DE = \dfrac{36}{13}$ cm

And $AE = \dfrac{15}{13}$ cm

Hence, $\boxed{DE = \dfrac{36}{13}\ cm}$ and $\boxed{AE = \dfrac{15}{13}\ cm}$

********** END *********