



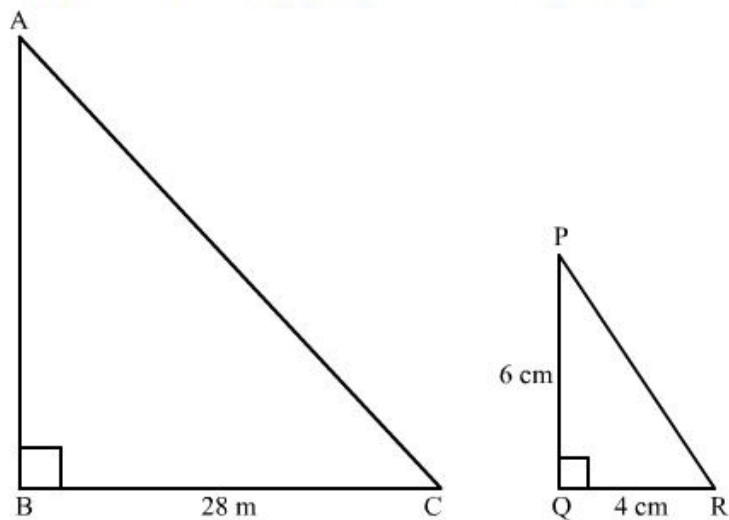
Triangles Ex 4.5 Q24

**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,  $\triangle ABC \sim \triangle PQR$   $\angle B = \angle Q$  and  $\angle A = \angle P$

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

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

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

$$\Rightarrow AB = 42\text{m}$$

Hence the height of the tower is 42m.

Triangles Ex 4.5 Q25

**Answer :**

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

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

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

$$\angle A = \angle A \quad \text{Common} \quad \angle C = \angle E \quad 90^\circ$$

So by  $AA$  similarity criterion, we have

$$\triangle ABC \sim \triangle ADE$$

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

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

Since

$$\begin{aligned} AB^2 &= AC^2 + BC^2 \\ &= 5^2 + 12^2 \\ &= 13^2 \end{aligned}$$

$$\text{So } DE = \frac{36}{13} \text{ cm}$$

$$\text{And } AE = \frac{15}{13} \text{ cm}$$

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

\*\*\*\*\* END \*\*\*\*\*