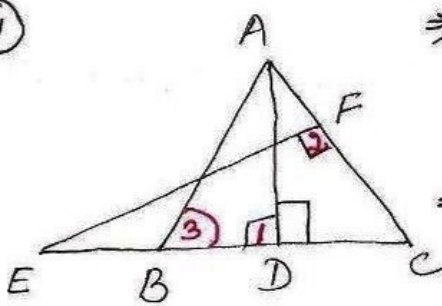


(11)



$$\Rightarrow \frac{AB}{PB} = \frac{BC}{QR}$$

$$\therefore \angle B = \angle Q$$

$$\frac{6}{x} = \frac{4}{28}$$

In $\triangle ABC$ and $\triangle PQR$

$$\Rightarrow x = 42$$

$$\frac{AB}{PB} = \frac{BC}{QR}, \angle B = \angle Q$$

\therefore height of tower = 42m

$\therefore \triangle ABC \sim \triangle PQR$ by SAS similarity

to prove $\triangle ABD \sim \triangle ECF$

proof In $\triangle ABC$

$AB = AC$ (given)

$\angle C = \angle B$ (isosceles \triangle prop.)

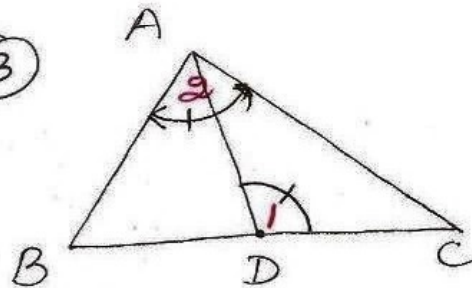
In $\triangle ABD$ and $\triangle ECF$

$$\angle 1 = \angle 2 = 90^\circ$$

$$\angle 3 = \angle C \text{ (proved)}$$

$\therefore \triangle ABD \sim \triangle ECF$ by AA cor.

(13)



To prove $CA^2 = CB \cdot CD$

proof $\angle C = \angle C$

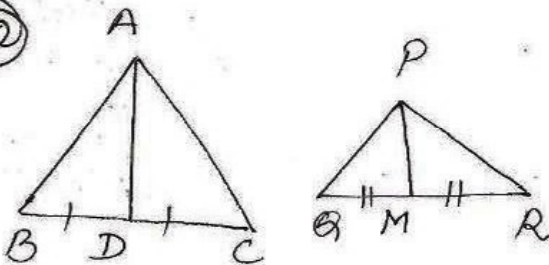
$$\angle 1 = \angle 2 \text{ (given)}$$

$\therefore \triangle ADC \sim \triangle BAC$ by AA cor.

$$\Rightarrow \frac{CA}{CB} = \frac{CD}{CA}$$

$$\Rightarrow CA^2 = CB \cdot CD$$

(12)



to prove $\triangle ABC \sim \triangle PQR$

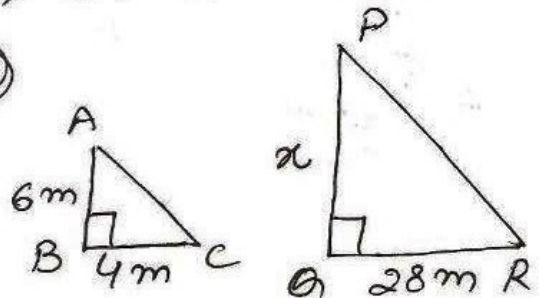
proof

$$\frac{AB}{PB} = \frac{AD}{PM} = \frac{BC}{QR} \text{ (given)}$$

$$\Rightarrow \frac{AB}{PB} = \frac{AD}{PM} = \frac{BD}{QM} \text{ [}\because \text{Dis midpt of BC, M is midpt. of QR]}$$

$\therefore \triangle ABD \sim \triangle PQM$ by SSS prop.

(15)



$\angle B = \angle Q = 90^\circ$
 $\angle C = \angle R$ (angle of elevation of Sun at same time and place)
 $\therefore \triangle ABC \sim \triangle PQR$ by AA