Triangles Ex 4.5 Q19

Answer :

It is given that $AB \perp BC$, $DC \perp BC$ and $DE \perp AC$.

We have to prove that $\triangle CED \sim \triangle ABC$.

Now,

$AB \perp BC$, $DC \perp BC$, so $AB \parallel DC$.

In $\triangle ABC$ and $\triangle CED$,

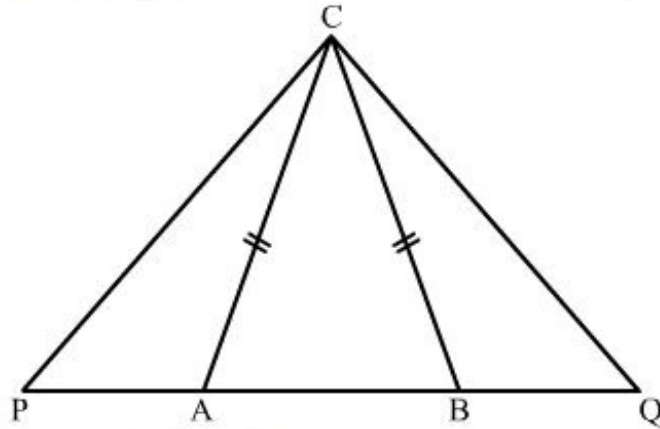$\angle B = \angle E = 90^0$ (Given)

$\angle A = \angle ECD$ (Alternate angles)

So, $\triangle CED \sim \triangle ABC$ (*AA* similarly rule)

Triangles Ex 4.5 Q20

Answer :

It is given that $\triangle ABC$ is isosceles and $AP \times BQ = AC^2$.

We have to prove that $\triangle APC \sim \triangle BCQ$.

It is given that $\triangle ABC$ is an isosceles triangle, so AC = BC.
Now,

$AP \times BQ = AC^2$ (Given)

$AP \times BQ = AC \times AC$

$\Rightarrow \dfrac{AP}{AC} = \dfrac{AC}{BQ}$

$\Rightarrow \dfrac{AP}{AC} = \dfrac{BC}{BQ}$

Also,

$\angle CAB = \angle CBA$ (Equal sides have equal angles opposite to them)

$\Rightarrow 180° - \angle CAP = 180° - \angle CBQ$

$\Rightarrow \angle CAP = \angle CBQ$

Hence, $\triangle APC \sim \triangle BCQ$ (SAS Similarity)

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