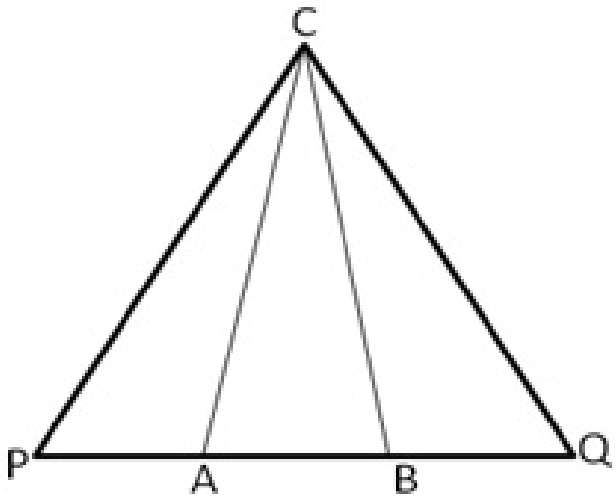
Exercise 4B

Question 13:



In ΔACP and ΔBCQ

$CA = CB$

$\angle CAB = \angle CBA$

$\Rightarrow 180^\circ - \angle CAB = 180^\circ - \angle CBA$

$\Rightarrow \quad \angle CAP = \angle CBQ$

Now, $AP \times BQ = AC^2$

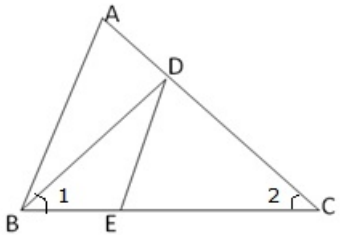
$$\Rightarrow \frac{AP}{AC} = \frac{AC}{BQ}$$

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

Thus, $\angle CAP = \angle CBQ$ and $\frac{AP}{AC} = \frac{BC}{BQ}$

$\therefore \Delta ACP \sim \Delta BCQ$

Question 14:



$\angle 1 = \angle 2$ (given)

$\frac{AC}{BD} = \frac{CB}{CE} \quad \Rightarrow \quad \frac{AC}{CB} = \frac{BD}{CE} \qquad (given)$

Also, $\angle 2 = \angle 1$

Thus, $\frac{AC}{CB} = \frac{BD}{CE}$

and $\angle 2 = \angle 1$

Therefore, by SAS similarity criterion $\Delta ACB \sim \Delta DCE$

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