Triangles Ex 4.5 Q3

Answer :

It is given that $AB \| QR$

$AB = 3\text{cm}$, $QR = 9\text{cm}$ and $PR = 6$ cm

We have to find PB.

Since $\Delta PRQ \sim \Delta PAB$

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

So

$$\frac{AB}{QR} = \frac{PB}{PR}$$

$$\frac{3\text{cm}}{9\text{cm}} = \frac{PB}{6\text{cm}}$$

$$PB = 2\text{cm}$$

Hence, $\boxed{PB = 2\text{cm}}$

Triangles Ex 4.5 Q4

Answer :

It is given that $XY \| BC$.

$AX = 1\text{cm}$, $XB = 3\text{cm}$ and $BC = 6\text{cm}$

We have to find XY.

Since $\Delta AXY \sim \Delta ABC$

$$\Rightarrow \frac{XY}{BC} = \frac{AX}{AB} \quad (AB = AX + XB = 4)$$

So

$$\frac{XY}{6\text{cm}} = \frac{1\text{cm}}{4\text{cm}}$$

$$XY = \frac{6\text{cm}}{4\text{cm}}$$

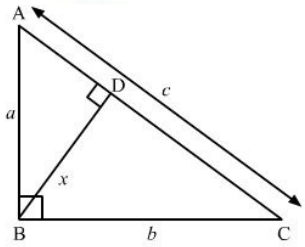
$$= 1.5\text{cm}$$

Hence, $\boxed{XY = 1.5\text{cm}}$

Triangles Ex 4.5 Q5

Answer :

Let ΔABC be a right angle triangle having sides a and b; and hypotenuse c. BD is the altitude drawn on the hypotenuse AC.



We have to find to prove $ab = cx$.

Since the altitude is perpendicular on the hypotenuse, both the triangles are similar

$$\frac{AB}{BD} = \frac{AC}{BC}$$

$$\frac{a}{x} = \frac{c}{b}$$

$$xc = ab$$

Hence, $\boxed{ab = cx}$.

Triangles Ex 4.5 Q6

Answer :

It is given that $\angle ABC = 90^0$ and $BD \perp AC$.

When $BD = 8\text{cm}$, $AD = 4\text{cm}$ we have to find the CD.

Since ABC is right angle triangle and BD is perpendicular on AC, so

$\Delta DBA \sim \Delta DCB$ (AA similarity)

$$\frac{BD}{CD} = \frac{AD}{BD}$$

$$\Rightarrow BD^2 = AD \times DC$$

$$\Rightarrow (8\text{cm})^2 = 4\text{cm} \times DC$$

$$\Rightarrow DC = \frac{64\text{cm}}{4\text{cm}} = 16\text{cm}$$

Hence, $\boxed{CD = 16\text{cm}}$

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