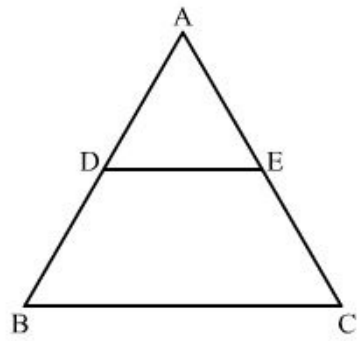




Triangles Ex 4.2 Q4

**Answer :**



It is given that  $AD = 2.4\text{cm}$ ,  $AE = 3.2\text{cm}$ ,  $DE = 2\text{cm}$  and  $BC = 5\text{cm}$ .

We have to find BD and CE.

Since  $DE \parallel BC$ , AB is transversal, then

$\angle ADE = \angle ABC$  (corresponding angles)

Since  $DE \parallel BC$ , AC is a transversal, then

$\angle AED = \angle ACB$  (corresponding angles)

In  $\triangle ADE$  and  $\triangle ABC$ ,

$$\angle ADE = \angle ABC \text{ (proved above)}$$

$$\angle AED = \angle ACB \text{ (proved above)}$$

so,  $\triangle ADE \sim \triangle ABC$  (Angle Angle similarity)

Since, the corresponding sides of similar triangles are proportional, then

$$\begin{aligned} \frac{AD}{AB} &= \frac{AE}{AC} = \frac{DE}{BC} \\ \Rightarrow \frac{AD}{AB} &= \frac{DE}{BC} \\ \Rightarrow \frac{2.4}{2.4 + DB} &= \frac{2}{5} \\ \Rightarrow 2.4 + DB &= 6 \\ \Rightarrow DB &= 6 - 2.4 \\ \Rightarrow DB &= 3.6 \text{ cm} \end{aligned}$$

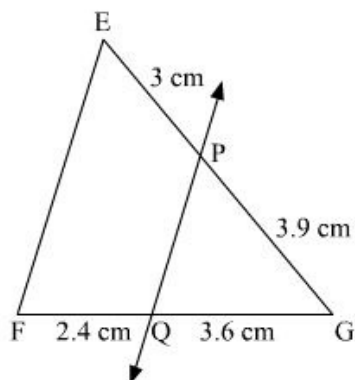
Similarly,

$$\begin{aligned} \frac{AE}{AC} &= \frac{DE}{BC} \\ \Rightarrow \frac{3.2}{3.2 + EC} &= \frac{2}{5} \\ \Rightarrow 3.2 + EC &= 8 \\ \Rightarrow EC &= 8 - 3.2 \\ \Rightarrow EC &= 4.8 \text{ cm} \end{aligned}$$

Hence,  $BD = 3.6 \text{ cm}$  and  $CE = 4.8 \text{ cm}$ .

Triangles Ex 4.2 Q5

**Answer :**



It is given that  $EP = 3 \text{ cm}$ ,  $PG = 3.9 \text{ cm}$ ,  $FQ = 3.6 \text{ cm}$  and  $FQ = 2.4 \text{ cm}$ .

We have to check that  $PQ \parallel EF$  or not.

According to Thales theorem we have

$$\frac{PG}{GE} = \frac{GQ}{FQ}$$

Now,

$$\frac{3.9}{3} \neq \frac{3.6}{2.4}$$

Hence, it is not proportional.

So,  $PQ \nparallel EF$ .

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