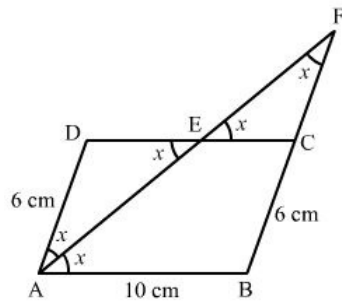Understanding shapes-III special types of quadrilaterals Ex 17.1 Q29

Answer :

AE is the bisector of $\angle A$.

$\therefore \angle DAE = \angle BAE = x$

$\angle BAE = \angle AED = x$ (alternate angles)

Since opposite angles in $\triangle ADE$ are equal, $\triangle ADE$ is an isosceles triangle.

$\therefore AD = DE = 6$ cm (sides opposite to equal angles)

$AB = CD = 10$ cm

$CD = DE + EC$

$\Rightarrow EC = CD - DE$

$\Rightarrow EC = 10 - 6 = 4$ cm

$\angle DEA = \angle CEF = x$ (vertically opposite angle)

$\angle EAD = \angle EFC = x$ (alternate angles)

Since opposite angles in $\triangle EFC$ are equal, $\triangle EFC$ is an isosceles triangle.

$\therefore CF = CE = 4$ cm (sides opposite to equal angles)

$\therefore CF = 4$ cm

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