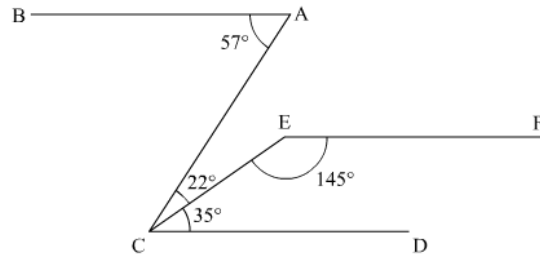




Lines and Angles Ex 8.4 Q4

Answer :

The figure is given as follows:



We need to prove that $AB \parallel EF$.

It is given that $\angle BAC = 57^\circ$ and

$$\angle ACD = \angle ACE + \angle ECD$$

$$\angle ACD = 22^\circ + 35^\circ$$

$$\angle ACD = 57^\circ$$

Thus,

$$\angle ACD = \angle BAC$$

But these are the pair of alternate interior opposite angles.

Theorem states: If a transversal intersects two lines in such a way that a pair of alternate interior angles is equal, then the two lines are parallel.

Therefore,

$$AB \parallel CD \text{ (i)}$$

It is given that $\angle FEC = 145^\circ$ and $\angle ECD = 35^\circ$

Thus,

$$\angle FEC + \angle ECD = 145^\circ + 35^\circ$$

$$\angle FEC + \angle ECD = 180^\circ$$

But these are the pair of consecutive interior opposite angles.

Theorem states: If a transversal intersects two lines in such a way that a pair of consecutive interior angles is supplementary, then the two lines are parallel.

Therefore,

$$CD \parallel EF \text{ (ii)}$$

From (i) and (ii), we get:

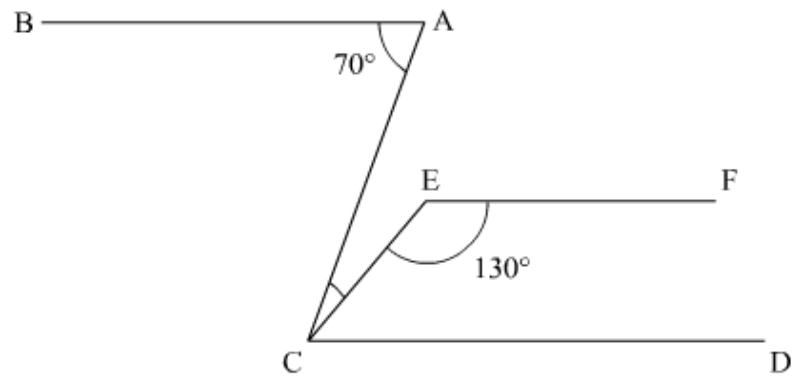
$$AB \parallel EF$$

Hence proved $\boxed{AB \parallel EF}$.

Lines and Angles Ex 8.4 Q5

Answer :

The figure is given as follows:



It is given that $AB \parallel CD$ and $CD \parallel EF$

Thus, $\angle BAC$ and $\angle ACD$ are alternate interior opposite angles.

Therefore,

$$\angle ACD = \angle BAC$$

$$\angle ACD = 70^\circ \quad (i)$$

Also, we have $CD \parallel EF$

$$\angle FEC + \angle ECD = 180^\circ$$

$$130^\circ + \angle ECD = 180^\circ$$

$$\angle ECD = 180^\circ - 130^\circ$$

$$\angle ECD = 50^\circ \quad (ii)$$

From the figure:

$$\angle ACE = \angle ACD - \angle ECD$$

From equations (i) and (ii):

$$\angle ACE = 70^\circ - 50^\circ$$

$$\angle ACE = \boxed{20^\circ}$$

Hence, the required value for $\angle ACE$ is $\boxed{20^\circ}$.

***** END *****