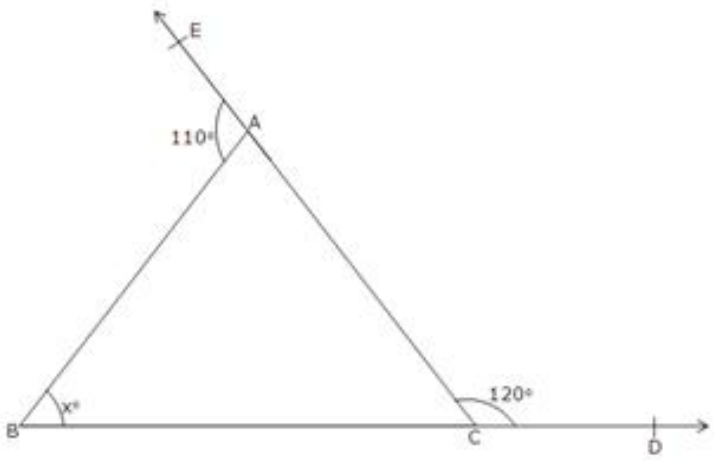
Exercise 4D

Question 17:

(i) $\angle EAB + \angle BAC = 180^o$ [Linear pair angles]



$110^o + \angle BAC = 180^o$

$\Rightarrow \angle BAC = 180^o - 110^o = 70^o$

Again, $\angle BCA + \angle ACD = 180^o$ [Linear pair angles]

$\Rightarrow \angle BCA + 120^o = 180^o$

$\Rightarrow \angle BCA = 180^o - 120^o = 60^o$

Now, in ΔABC,

$\angle ABC + \angle BAC + \angle ACB = 180^o$

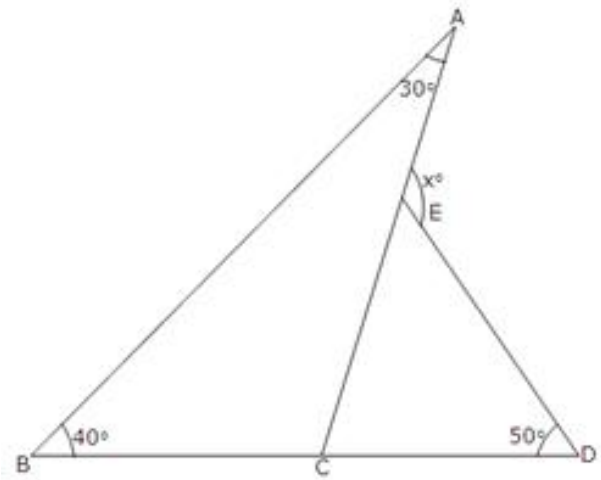
$x^o + 70^o + 60^o = 180^o$

$\Rightarrow x + 130^o = 180^o$

$\Rightarrow x = 180^o - 130^o = 50^o$

$\therefore x = 50$

(ii)



In ΔABC,

$\angle A + \angle B + \angle C = 180^o$

$\Rightarrow 30^o + 40^o + \angle C = 180^o$

$\Rightarrow 70^o + \angle C = 180^o$

$\Rightarrow \angle C = 180^o - 70^o = 110^o$

Now ∠BCA + ∠ACD = 180^o [Linear pair]

⇒ 110^o + ∠ACD = 180^o

⇒ ∠ACD = 180^o - 110^o = 70^o

In **Δ**ECD,

⇒ ∠ECD + ∠CDE + ∠CED = 180^o

⇒ 70^o + 50^o + ∠CED = 180^o

⇒ 120^o + ∠CED = 180^o

∠CED = 180^o - 120^o = 60^o

Since ∠AED and ∠CED from a linear pair

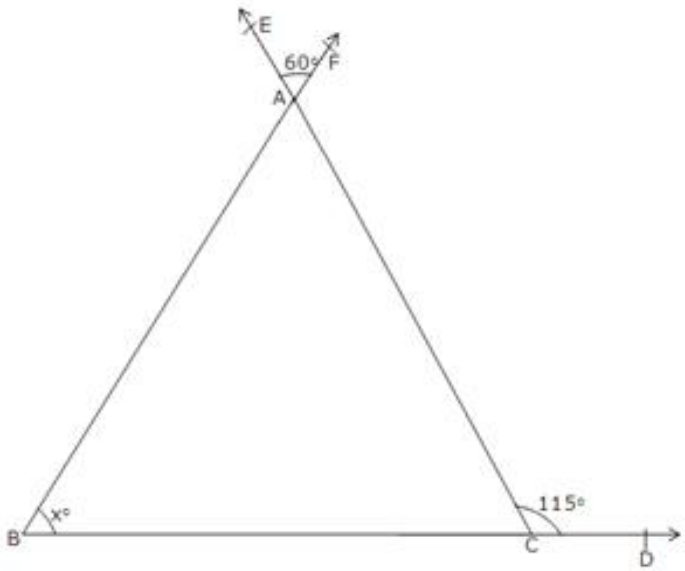
So, ∠AED + ∠CED = 180^o

⇒ x^o + 60^o = 180^o

⇒ x^o = 180^o - 60^o = 120^o

∴ x = 120

(iii)



∠EAF = ∠BAC [Vertically opposite angles]

⇒ ∠BAC = 60^o

In **Δ**ABC, exterior ∠ACD is equal to the sum of two opposite interior angles.

So, ∠ACD = ∠BAC + ∠ABC

⇒ 115^o = 60^o + x^o

⇒ x^o = 115^o - 60^o = 55^o

∴ x = 55

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