



Exercise 15B

Q6

Answer :

We know that the exterior angle of a triangle is equal to the sum of the interior opposite angles.

In $\triangle ABC$:

$$\angle ACD = \angle BAC + \angle ABC = 25^\circ + 45^\circ$$

$$\angle ACD = 70^\circ$$

(ii) In $\triangle ECD$:

$$\angle AED = \angle ECD + \angle EDC = 70^\circ + 40^\circ$$

$$\Rightarrow \angle AED = 110^\circ$$

Q7

Answer :

Sum of the angles of a triangle is 180° .

In $\triangle ABC$:

$$\angle BAC + \angle CBA + \angle ACB = 180^\circ$$

$$\angle BAC = 180^\circ - (40^\circ + 100^\circ)$$

$$\Rightarrow \angle BAC = 40^\circ$$

We know that the exterior angle of a triangle is equal to the sum of the interior opposite angles.

$$\angle ACD = \angle BAC + \angle CBA = 40^\circ + 40^\circ = 80^\circ$$

$$(i) \angle ACD = 80^\circ$$

(ii) In $\triangle ACD$:

$$\angle CAD + \angle ACD + \angle ADC = 180^\circ$$

$$\Rightarrow \angle ADC = 180^\circ - (50^\circ + 80^\circ)$$

$$\Rightarrow \angle ADC = 50^\circ$$

$$\therefore \angle ADC = 50^\circ$$

$$(iii) \angle DAB + \angle DAE = 180^\circ \quad (\text{since } BE \text{ is a straight line})$$

$$\angle DAE = 180^\circ - (\angle DAC + \angle CAB)$$

$$\angle DAE = 180^\circ - (50^\circ + 40^\circ)$$

$$\angle DAE = 90^\circ$$

Q8

Answer :

$$\frac{x}{y} = \frac{2}{3}$$

$$\Rightarrow 3x = 2y$$

$$\Rightarrow x = \frac{2}{3}y$$

We know that the exterior angle of a triangle is equal to the sum of the interior opposite angles.

$$\therefore \angle A + \angle B = \angle ACD$$

$$x^\circ + y^\circ = 130^\circ$$

$$\Rightarrow \frac{2y}{3} + y = 130$$

$$\Rightarrow 5y = 130 \times 3$$

$$\Rightarrow 5y = 390$$

$$\Rightarrow y = 78$$

$$\Rightarrow x = \frac{2}{3} \times 78$$

$$\Rightarrow x = 52$$

Also, sum of the angles in any triangle is 180°

$$\therefore x + y + z = 180$$

$$z = 180 - 78 - 52$$

$$z = 50$$

***** END *****