Exercise 15B

Q6

Answer:

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

In $\triangle ABC$:
$\angle ACD = \angle BAC + \angle ABC = 25° + 45°$
$\angle ACD = 70°$
(ii) $In \triangle ECD:$
$\angle AED = \angle ECD + \angle EDC = 70° + 40°$
$=> \angle AED = 110°$

Q7

Answer:

Sum of the angles of a triangle is $180°$.

$In \triangle ABC:$
$\angle BAC + \angle CBA + \angle ACB = 180°$
$\angle BAC = 180° - (40° + 100°)$
$=> \angle BAC = 40°$

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

$\angle ACD = \angle BAC + \angle CBA = 40° + 40° = 80°$
$(i) \angle ACD = 80°$
$(ii) In \triangle ACD:$
$\angle CAD + \angle ACD + \angle ADC = 180°$
$=> \angle ADC = 180° - (50° + 80°)$
$=> \angle ADC = 50°$
$\therefore \angle ADC = 50°$
$(iii) \angle DAB + \angle DAE = 180°$ $(since \ BE \ is \ a \ straight \ line)$
$\angle DAE = 180° - (\angle DAC + \angle CAB)$
$\angle DAE = 180° - (50° + 40°)$
$\angle DAE = 90°$

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.

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

$x° + y° = 130°$

$\Rightarrow \frac{2y}{3} + y = 130$
$\Rightarrow 5y = 130 \times 3$
$\Rightarrow 5y = 390$
$\Rightarrow y = 78$
$\Rightarrow x = \frac{2}{3} \times 78$
$\Rightarrow x = 52$

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

$\therefore$ x + y + z = 180

z = 180 - 78 - 52

z = 50

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