

Exercise 15B

Q1

Answer:

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

$$\angle ACD = \angle CAB + \angle CBA$$

 $\angle ACD = 75^{\circ} + 45^{\circ} = 120^{\circ}$

Q2

Answer:

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

$$\therefore \angle BAC + \angle ABC = \angle ACD$$
$$x + 68 = 130$$
$$x = 62$$

Sum of the angles in any triangle is 180°.

$$\begin{array}{l} \therefore \angle BAC + \angle ABC + \angle ACB = 180^{\circ} \\ 62 + 68 + y = 180 \\ y = 50 \end{array}$$

Q3

Answer:

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

$$\therefore \angle BAC + \angle CBA = \angle ACD$$

$$32 + x = 65$$

$$x = 33$$

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

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

32 + 33 + y = 180
y = 115

$$\therefore x = 33$$
$$y = 115$$

Q4

Answer:

Suppose the interior opposite angles are $(2x)^{\circ}$ and $(3x)^{\circ}$.

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

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3x + 2x = 110x = 22
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The interior opposite angles are $(2\times22)^\circ$ and $(3\times22)^\circ$, i.e. 44° and 66°.

Suppose the third angle of the triangle is y° .

Now, sum of the angles in any triangle is 180°.

$$44 + 66 + y = 180$$

 $y = 70$

Hence, the angles of the triangle are 44°, 66° and 70°.

Q5

Answer:

Suppose the interior opposite angles of an exterior angle 100° are x^0 and x^0 . We know that the exterior angle of a triangle is equal to the sum of the interior opposite angles.

$$x + x = 100$$

$$2x = 100$$

$$x = 50$$

Also, sum of the angles of any triangle is 180° . Let the measure of the third angle be y° .

$$x + x + y = 180$$

$$50 + 50 + y = 180$$

$$y = 80$$

Hence, the angles are of the measures 50°, 50° and 80°.

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