Exercise 15B

Q1

Answer:

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

$$\angle ACD = \angle CAB + \angle CBA$$
$$\angle ACD = 75° + 45° = 120°$$

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 180⁰.

$$\therefore \angle BAC + \angle ABC + \angle ACB = 180°$$
$$62 + 68 + y = 180$$
$$y = 50$$

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 $180°$.

$$\therefore \angle BAC + \angle CBA + \angle ACB = 180°$$
$$32 + 33 + y = 180$$
$$y = 115$$

$\therefore$ x= 33

y =115

Q4

Answer:

Suppose the interior opposite angles are (2x)° and (3x)°.

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

$\therefore 3x + 2x = 110$

$x = 22$

The interior opposite angles are $(2 \times 22)°$ and $(3 \times 22)°$, i.e. 44° and 66°.
Suppose the third angle of the triangle is $y°$.
Now, sum of the angles in any triangle is 180°.

$\therefore 44 + 66 + y = 180$

$y = 70$

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

Q5

Answer :

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

$\therefore x + x = 100$

$2x = 100$

$x = 50$

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

$\therefore x + x + y = 180$

$50 + 50 + y = 180$

$y = 80$

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

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