

Exercise 16A

Q1

Answer:

We get a triangle by joining the three non-collinear points A, B and C.

- (i) The side opposite to ∠C is AB.
- (ii) The angle opposite to the side BC is ∠A.
- (iii) The vertex opposite to the side CA is B.
- (iv) The side opposite to the vertex B is AC.

Q2

Answer:

The measures of two angles of a triangle are 72° and 58°.

Let the third angle be x.

Now, the sum of the measures of all the angles of a triangle is 180°.

$$\therefore x + 72^{\circ} + 58^{\circ} = 180^{\circ}$$

$$\Rightarrow x + 130^{\circ} = 180^{\circ}$$

$$\Rightarrow x = 180^{\circ} - 130^{\circ}$$

$$\Rightarrow x = 50^{\circ}$$

The measure of the third angle of the triangle is 50°.

Q3

Answer:

The angles of a triangle are in the ratio 1:3:5.

Let the measures of the angles of the triangle be (1x), (3x) and (5x)

Sum of the measures of the angles of the triangle = 180°

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∴ 1x + 3x + 5x = 180^{\circ}
⇒ 9x = 180^{\circ}
⇒ x = 20^{\circ}
1x = 20^{\circ}
3x = 60^{\circ}
5x = 100^{\circ}
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The measures of the angles are 20°, 60° and 100°.

Q4

Answer:

In a right angle triangle, one of the angles is 90°.

It is given that one of the acute angled of the right angled triangle is 50°.

We know that the sum of the measures of all the angles of a triangle is 180°.

Now, let the third angle be x.

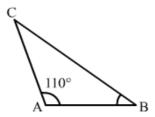
Therefore, we have:

90° + 50° +
$$x = 180°$$

⇒ 140° + $x = 180°$
⇒ $x = 180° - 140°$
⇒ $x = 40°$

The third acute angle is 40°.

Answer:



Given:

$$\angle A = 110^{\circ}$$
 and $\angle B = \angle C$

Now, the sum of the measures of all the angles of a traingle is 180°.

$$∠A + ∠B + ∠C = 180^{\circ}$$

⇒ 110° + ∠B + ∠B = 180°

⇒ 110° + 2∠B = 180°

⇒ 2∠B = 180° - 110°

⇒ 2∠B = 70°

⇒ ∠B = 70° / 2

⇒ ∠B = 35°

The measures of the three angles:

Q6

Answer:

Given:

$$\angle A = \angle B + \angle C$$

We know:

$$\angle A + \angle B + \angle C = 180^{\circ}$$

 $\Rightarrow \angle B + \angle C + \angle B + \angle C = 180^{\circ}$

 $\Rightarrow 2\angle B + 2\angle C = 180^{\circ}$

 $\Rightarrow 2(\angle B + \angle C) = 180^{\circ}$

 $\Rightarrow \angle B + \angle C = 180/2$

 $\Rightarrow \angle B + \angle C = 90^{\circ}$

 $\therefore \angle A = 90^{\circ}$

This shows that the triangle is a right angled triangle.

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