Exercise 15A

Q1

Answer :

Sum of the angles of a triangle is 180°.

$$\therefore \angle A + \angle B + \angle C = 180^\circ$$
$$72^\circ + 63^\circ + \angle C = 180^\circ$$
$$\angle C = 45^\circ$$

Hence, ∠C measures 45°.

Q2

Answer :

Sum of the angles of any triangle is 180°.

In ΔDEF:

$$\angle \mathrm{D} + \angle \mathrm{E} + \angle \mathrm{F} = 180^\circ$$
$$\angle \mathrm{D} + 105^\circ + 40^\circ = 180^\circ$$
$$\text{or } \angle \mathrm{D} = 180^\circ - (105^\circ + 40^\circ)$$
$$\text{or } \angle \mathrm{D} = 35^\circ$$

Q3

Answer :

Sum of the angles of any triangle is 180°.

In ΔXYZ:

$$\angle X + \angle Y + \angle Z = 180^\circ$$
$$90^\circ + \angle Y + 48^\circ = 180^\circ$$
$$\Rightarrow \angle Y = 180^\circ - 138^\circ = 42^\circ$$

Q4

Answer :

Suppose the angles of the triangle are (4x)°, (3x)° and (2x)°.

Sum of the angles of any triangle is 180°.

∴ $4x + 3x + 2x = 180$

$9x = 180$

$x = 20$

Therefore, the angles of the triangle are $(4 \times 20)^\circ$, $(3 \times 20)^\circ$ and $(2 \times 20)^\circ$, i.e. 80°, 60° and 40°.

Q5

Answer :

Sum of the angles of a triangle is 180°.
Suppose the other angle measures x.

It is a right angle triangle. Hence, one of the angle is 90°.

$$\therefore 36^\circ + 90^\circ + x = 180^\circ$$
$$x = 54^\circ$$

Hence, the other angle measures 54°.

Q6

Answer :

Suppose the acute angles are $(2x)^\circ$ and $(x)^\circ$
Sum of the angles of any triangle is 180°

$\therefore 2x+x+90 = 180$
$\Rightarrow (3x) = 180-90$
$\Rightarrow (3x) = 90$
$\Rightarrow x = 30$
So, the angles measure $(2\times30)^\circ$ and 30° i.e. 60° and 30°

Q7

Answer :

The other two angles are equal. Let one of these angles be x°.

Sum of angles of any triangle is 180°.

$\therefore x + x + 100 = 180$
$2x = 80$
$x = 40$

Hence, the equal angles of the triangle are 40° each.

Q8

Answer :

Suppose the third angle of the isosceles triangle is x^o.
Then, the two equal angles are $(2x)^o$ and $(2x)^o$.
Sum of the angles of any triangle is 180^o.

$\therefore 2x + 2x + x = 180$
$5x = 180$
$x = 36$

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