Properties of Triangles Ex 15.2 Q4

Answer :

If the angles of a triangle are in ratio $1:2:3$, then let us take the first angle to be x.

Which means that the second angle will be 2x and the third angle will be 3x.

Sum of all the three angles of a triangle $= 180^\circ$

$\therefore x + 2x + 3x = 180^\circ$

$\Rightarrow 6x = 180^\circ$

$\Rightarrow x = \frac{180^\circ}{6}$

$\Rightarrow x = 30^\circ$

$\Rightarrow 2x = 2 \times 30^\circ = 60^\circ$

$\Rightarrow 3x = 3 \times 30^\circ = 90^\circ$

Therefore, the first angle is equal to 30°, the second angle is equal to 60°, and the third angle is equal to 90°.

Properties of Triangles Ex 15.2 Q5

Answer :

Sum of all the three angles of a triangle $= 180^\circ$

$\Rightarrow \left(x - 40\right)^\circ + \left(x - 20\right)^\circ + \left(\frac{x}{2} - 10\right)^\circ = 180^\circ$

$\Rightarrow x + x + \frac{x}{2} - 40^\circ - 20^\circ - 10^\circ = 180^\circ$

$\Rightarrow x + x + \frac{x}{2} - 70^\circ = 180^\circ$

$\Rightarrow \frac{5x}{2} = 180^\circ + 70^\circ$

$\Rightarrow \frac{5x}{2} = 250^\circ$

$\Rightarrow x = \frac{2}{5} \times 250^\circ$

$\Rightarrow x = 100^\circ$

Hence, we can conclude that x is equal to 100°.

Properties of Triangles Ex 15.2 Q6

Answer :

Let the first angle of the triangle be x.

Therefore, we can say that the second angle of the triangle will be $\left(x + 10^\circ\right)$ and the third angle of the triangle will be $\left(x + 10^\circ + 10^\circ\right)$.

We know that the sum of all the three angles of a triangle is equal to 180°.

$\therefore x + \left(x + 10^\circ\right) + \left(x + 10^\circ + 10^\circ\right) = 180^\circ$

$\Rightarrow x + x + x + 10^\circ + 10^\circ + 10^\circ = 180^\circ$

$\Rightarrow 3x + 30^\circ = 180^\circ$

$\Rightarrow 3x = 180^\circ - 30^\circ$

$\Rightarrow 3x = 150^\circ$

$\Rightarrow x = \frac{150^\circ}{3}$

$\Rightarrow x = 50^\circ$

Now, $\left(x + 10^\circ\right) = 50^\circ + 10^\circ$

$\Rightarrow \left(x + 10^\circ\right) = 60^\circ$

And, $\left(x + 10^\circ + 10^\circ\right) = 50^\circ + 10^\circ + 10^\circ$

$\Rightarrow \left(x + 10^\circ + 10^\circ\right) = 70^\circ$

Hence, we can say that the three angles of the triangle are 50°, 60° and 70°.

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