



Exercise 4D

Question 8:

Let the two equal angles, A and B, of the triangle be x° each.

We know,

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

$$\Rightarrow x^\circ + x^\circ + \angle C = 180^\circ$$

$$\Rightarrow 2x^\circ + \angle C = 180^\circ \dots(i)$$

Also, it is given that,

$$\angle C = x^\circ + 18^\circ \dots(ii)$$

Substituting $\angle C$ from (ii) in (i), we get,

$$\Rightarrow 2x^\circ + x^\circ + 18^\circ = 180^\circ$$

$$\Rightarrow 3x^\circ = 180^\circ - 18^\circ = 162^\circ$$

$$x = 162/3 = 54^\circ$$

Thus, the required angles of the triangle are 54° , 54° and $x^\circ + 18^\circ = 54^\circ + 18^\circ = 72^\circ$.

Question 9:

Let $\angle C$ be the smallest angle of ABC.

Then, $\angle A = 2\angle C$ and $B = 3\angle C$

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

$$\Rightarrow 2\angle C + 3\angle C + \angle C = 180^\circ$$

$$\Rightarrow 6\angle C = 180^\circ$$

$$\Rightarrow \angle C = 30^\circ$$

$$\text{So, } \angle A = 2\angle C = 2(30^\circ) = 60^\circ$$

$$\angle B = 3\angle C = 3(30^\circ) = 90^\circ$$

\therefore The required angles of the triangle are 60° , 90° , 30° .

Question 10:

Let ABC be a right angled triangle and $\angle C = 90^\circ$

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

$$\Rightarrow \angle A + \angle B = 180^\circ - \angle C = 180^\circ - 90^\circ = 90^\circ$$

$$\text{Suppose } \angle A = 53^\circ$$

$$\text{Then, } 53^\circ + \angle B = 90^\circ$$

$$\Rightarrow \angle B = 90^\circ - 53^\circ = 37^\circ$$

\therefore The required angles are 53° , 37° and 90° .

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