



#### Exercise 4D

Question 6:

Since,  $\angle P$ ,  $\angle Q$  and  $\angle R$  are the angles of a triangle.

So,  $\angle P + \angle Q + \angle R = 180^\circ$  ....(i)

Now,  $\angle P - \angle Q = 42^\circ$  [Given]

$\Rightarrow \angle P = 42^\circ + \angle Q$  ....(ii)

and  $\angle Q - \angle R = 21^\circ$  [Given]

$\Rightarrow \angle R = \angle Q - 21^\circ$  ....(iii)

Substituting the value of  $\angle P$  and  $\angle R$  from (ii) and (iii) in (i), we get,

$\Rightarrow 42^\circ + \angle Q + \angle Q + \angle Q - 21^\circ = 180^\circ$

$\Rightarrow 3\angle Q + 21^\circ = 180^\circ$

$\Rightarrow 3\angle Q = 180^\circ - 21^\circ = 159^\circ$

$\angle Q = 159/3 = 53^\circ$

$\therefore \angle P = 42^\circ + \angle Q$

$= 42^\circ + 53^\circ = 95^\circ$

$\angle R = \angle Q - 21^\circ$

$= 53^\circ - 21^\circ = 32^\circ$

$\therefore \angle P = 95^\circ$ ,  $\angle Q = 53^\circ$  and  $\angle R = 32^\circ$ .

Question 7:

Given that the sum of the angles A and B of a  $\triangle ABC$  is  $116^\circ$ , i.e.,  $\angle A + \angle B = 116^\circ$ .

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

So,  $116^\circ + \angle C = 180^\circ$

$\Rightarrow \angle C = 180^\circ - 116^\circ = 64^\circ$

Also, it is given that:

$\angle A - \angle B = 24^\circ$

$\Rightarrow \angle A = 24^\circ + \angle B$

Putting,  $\angle A = 24^\circ + \angle B$  in  $\angle A + \angle B = 116^\circ$ , we get,

$\Rightarrow 24^\circ + \angle B + \angle B = 116^\circ$

$\Rightarrow 2\angle B + 24^\circ = 116^\circ$

$\Rightarrow 2\angle B = 116^\circ - 24^\circ = 92^\circ$

$\angle B = 92/2 = 46^\circ$

Therefore,  $\angle A = 24^\circ + 46^\circ = 70^\circ$

$\therefore \angle A = 70^\circ$ ,  $\angle B = 46^\circ$  and  $\angle C = 64^\circ$ .

\*\*\*\*\* END \*\*\*\*\*