

Exercise 4D

Question 24:

In the given \triangle ABC, we have,

 $\angle A : \angle B : \angle C = 3 : 2 : 1$

Let $\angle A = 3x$, $\angle B = 2x$, $\angle C = x$. Then,

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

 \Rightarrow 3x + 2x + x = 180°

 \Rightarrow 6x = 180°

 \Rightarrow x = 30°

 $\angle A = 3x = 330^{\circ} = 90^{\circ}$

 $\angle B = 2x = 230^{\circ} = 60^{\circ}$

and, $\angle C = x = 30^{\circ}$

Now, in \triangle ABC, we have,

Ext $\angle ACE = \angle A + \angle B = 90^{\circ} + 60^{\circ} = 150^{\circ}$

 \angle ACD + \angle ECD = 150°

⇒ ∠ECD = 150° - ∠ACD

 \Rightarrow \angle ECD = 150° - 90° [since, AD \perp CD, \angle ACD = 90°]

⇒ ∠ECD= 60°

Question 25:

In \triangle ABC, AN is the bisector of \angle A and AM \perp BC.

Now in \triangle ABC we have;

∠A = 180° - ∠B - ∠C

 \Rightarrow $\angle A = 180^{\circ} - 65^{\circ} - 30^{\circ}$

= 180° - 95°

= 85°

Now, in \triangle ANC we have;

Ext.
$$\angle$$
 MNA = \angle NAC + 30°

$$= \frac{1}{2} \angle A + 30^{\circ}$$

$$= \frac{85^{\circ}}{2} + 30^{\circ}$$

$$= \frac{85^{\circ} + 60^{\circ}}{2}$$

$$= \frac{145^{\circ}}{2}$$

Therefore,
$$\angle MNA = \frac{145^{\circ}}{2}$$

In $_{\Delta}$ MAN. we have;

$$\angle$$
MAN = $180^{\circ} - \angle$ AMN - \angle MNA
= $180^{\circ} - 90^{\circ} - \angle$ MNA [since AM \bot BC, \angle AMN = 90°]
= $90^{\circ} - \frac{145^{\circ}}{2}$ [since \angle MNA = $\frac{145^{\circ}}{2}$]
= $\frac{180^{\circ} - 145^{\circ}}{2}$
= $\frac{35^{\circ}}{2}$
= 17.5°

Thus, ∠MAN =

Question 26:

(i) False (ii) True (iii) False (iv) False (v) True (vi) True.

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