Exercise 4D

Question 24:
In the given **Δ**ABC, we have,
∠A : ∠B : ∠C = 3 : 2 : 1
Let ∠A = 3x, ∠B = 2x, ∠C = x. Then,
∠A + ∠B + ∠C = 180°
⇒ 3x + 2x + x = 180°
⇒ 6x = 180°
⇒ x = 30°
∠A = 3x = 3 30° = 90°
∠B = 2x = 2 30° = 60°
and, ∠C = x = 30°
Now, in **Δ**ABC, we have,
Ext ∠ACE = ∠A + ∠B = 90° + 60° = 150°
∠ACD + ∠ECD = 150°
⇒ ∠ECD = 150° - ∠ACD
⇒ ∠ECD = 150° - 90° [since , AD ⊥ CD, ∠ACD = 90°]
⇒ ∠ECD= 60°

Question 25:
In **Δ**ABC, AN is the bisector of ∠A and AM ⊥ BC.
Now in **Δ**ABC we have;
∠A = 180° - ∠B - ∠C
⇒ ∠A = 180° - 65° - 30°
= 180° - 95°
= 85°
Now, in **Δ**ANC we have;

Ext. $\angle MNA = \angle NAC + 30^\circ$

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

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

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

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

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

In $\triangle$ MAN. we have;

$\angle MAN = 180^\circ - \angle AMN - \angle MNA$

$= 180^\circ - 90^\circ - \angle MNA$ [since AM $\perp$ BC, $\angle AMN = 90^\circ$]

$= 90^\circ - \dfrac{145^\circ}{2}$ [since $\angle MNA = \dfrac{145^\circ}{2}$]

$= \dfrac{180^\circ - 145^\circ}{2}$

$= \dfrac{35^\circ}{2}$

$= 17.5^\circ$

Thus, $\angle MAN =$

Question 26:
(i) False (ii) True (iii) False (iv) False (v) True (vi) True.

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