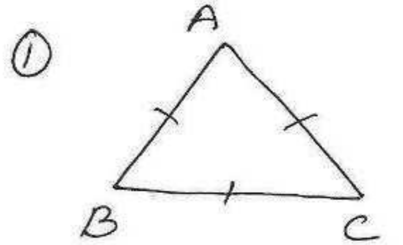
ex 7.4

(1)



Sol. In $\triangle ABC$, $AB = AC$

$\Rightarrow \angle C = \angle B$ ... (i)

[isos. $\triangle$ prop]

$BC = AC$

$\angle A = \angle B$ ... (ii) (do)

$\angle A + \angle B + \angle C = 180°$

$\angle A + \angle A + \angle A = 180°$

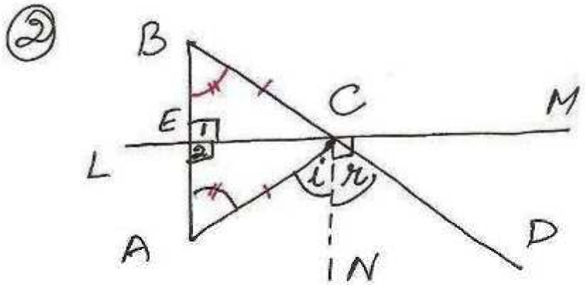
$\Rightarrow 3\angle A = 180°$

$\Rightarrow \angle A = \frac{180}{3}$

$= 60°$

$\therefore \angle A = \angle B = \angle C = 60°$

(2)



to prove $AE = BE$

proof $CN \perp LM$

$AB \perp LM$

$\Rightarrow AB \parallel NC$

$\angle A = \angle i$ ... (i) (al interior angles)

$\angle B = \angle r$ ... (ii)

(corres. angles)

$\angle i = \angle r$ ... (iii)

from (i), (ii), (iii)

$\angle A = \angle B$

In $\triangle CEB$ and $\triangle CEA$

$\angle B = \angle A$ (proved)

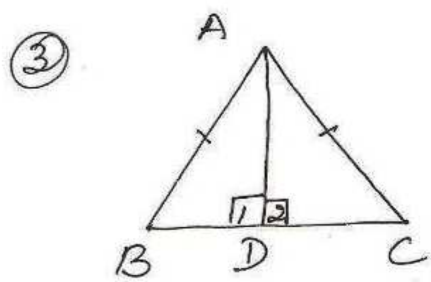
$\angle 1 = \angle 2 = 90°$

$CE = CE$ (common)

$\therefore \triangle CEB \cong \triangle CEA$ by AAS cor.

$\therefore BE = AE$ (cpct)

(3)



In $\triangle ADB$ and $\triangle ADC$

$\angle 1 = \angle 2 = 90°$

$AB = AC$ (given)

$AD = AD$ (common)

$\therefore \triangle ADB \cong \triangle ADC$ by RHS

Better to use $\angle B = \angle C$

NCERT Exemplar Sols. by Dev Anoop (Bathinda)