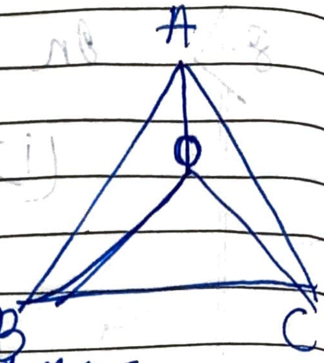
## 7.2




1) given $AB = AC$

To prove : $OB = OC$

$\Delta AOB$ and $\Delta AOC$

(i) $\angle ABO = \angle ACO$ } ASS

(ii) $AB = AC$

(iii) $OB = OC$

$\Delta BOC$

$\angle OBC = \angle OCB$

$\Rightarrow OB = OC$

2) Given :

Line AD is perpendicular to BC

So, $\angle ADC = \angle ADB = 90°$

& ~~line~~ line AD bisect line BC

(as it is perpendicular bisector) $BD = CD$

In $\Delta ABD$ and $\Delta ACD$

$AD = AD$

$\angle ADB = \angle ADC$

$BD = CD$

$\Delta ADC \cong \Delta ADB$

$\therefore AB = AC$

Therefore, ABC is an isosceles triangle in which $AB = AC$.

Hence proved.

3) In $\Delta ABC$

$AB = AC$ [Given]

$\Rightarrow \angle B = \angle C$

Now, in right triangle BFC and CEB.

$\angle BFC = \angle CEB$ [Each $= 90°$]

$\angle FBC = \angle ECB$ [Proved above]

$BC = BC$

$\therefore \Delta BFC \cong \Delta CEB$

Hence, $BE = CF$ (CPCT) Proved.

4.) (i) In $\Delta ABE$ and $ACF$ we have,

$BF = CF$ [Given]

$\angle BAI = \angle CAF$ [Common]

$\angle BEA = \angle CFA$

So, $\Delta ABE \cong \Delta ACF$ [AAS]

(ii) Also $AB = AC$

i.e. $ABC$ is an isosceles triangle.