3) 7.3

3) (i) In ΔABM and ΔPQN

We have

$BM = QN$

$[BC = \frac{1}{2} QR]$

$\Rightarrow \frac{1}{2} BC = \frac{1}{2} QR$

$AB = PQ$

$AM = PN$

$\therefore \Delta ABM \cong \Delta PQN$ [SSS congruence]

$\Rightarrow \angle ABM = \angle PQN$

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(ii) Now, in $\triangle ABC$ and $\triangle PQR$, we have

$AB = PQ$
$\angle ABC = \angle PQR$
$BC = QR$
$\therefore \triangle ABC \cong \triangle PQR$ [SAS congruen]

4.) BE and CF are altitude of a $\triangle ABC$

$\therefore \angle BEC = \cancel{90} \angle CFB = 90°$

Now, in right triangles BEB and CFB, we have
Hyp, BC = Hyp. BC [Common]
Side BE = Side CF [Given]

$\therefore \triangle BEC \cong \triangle CFB$ [By RHS congruence]
$\therefore \angle BCE = \angle CBF$ (CPCT)

Now, in $\triangle ABC$, $\angle B = \angle C$

$\therefore AB = AC$.

Hence $\triangle ABC$ is an isosceles triangle.

5.) Draw $AP \perp BC$

In $\triangle ABP$ and $\triangle ACP$, we have

$AB = AC$ [Given]

$\angle ADB = \angle APC$ [Each $= 90^\circ$]

$AB = AP$ [Common]

$\triangle ABP \cong \triangle ACD$ [By RHS congruence]

Also $\angle B = \angle C$ [CPCT]