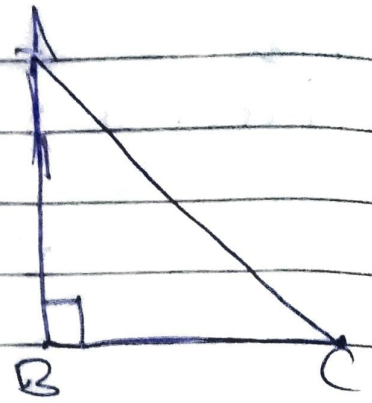
14.07.21 — Ch - 7 Triangles

Ex - 7.4

Ans) Given,

In $\triangle ABC$, $\angle B = 90°$



To prove :- AC is the longest side

Proof :- In $\triangle ABC$,

$\angle B = 90°$

$\Rightarrow \angle A$ and $\angle C$ must be acute.

$\angle B > \angle A$

$AC > BC$ ... ① [Side opp. in greater angle is longer]

$\angle B > \angle C$

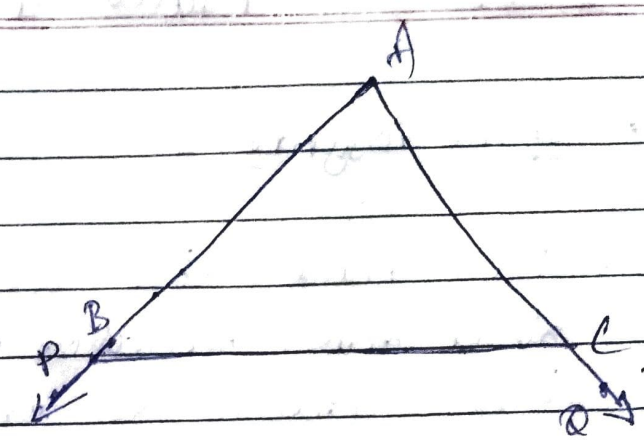
$AC > AB$ ... ② [Side opp. in greater angle is longer.]

From ① and ②

AC is the longest side.

i.e., hypotenuse is the longest side.

Ans,



Given,

Sides AB and AC of $\triangle ABC$ are extended to points P and Q respectively.

Also, $\angle PBC < \angle QCB$

Prove that :- $AC > AB$

Proof :- $\angle PBC < \angle QCB$ (given)

$\Rightarrow -\angle PBC > -\angle QCB$

$\Rightarrow 180^\circ - \angle PBC > 180^\circ - \angle QCB$

$\Rightarrow \angle ABC > \angle ACB$

$\therefore AC > AB$ [Side opp. in greater angle is larger].