

MATHEMATICS

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Class-7th

Chapter-7

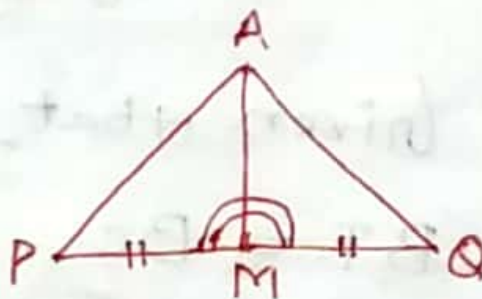
**Congruence of
Triangles**

**Solution of
Exercise-7.2**

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Q.3. Sol.



(i) $PM = QM$
(Given)

(ii) $\angle PMA = \angle QMA$
(Given).

(iii) $AM = AM$ (Common).

(iv) $\triangle AMP \cong \triangle AMQ$

SAS congruence criterion.

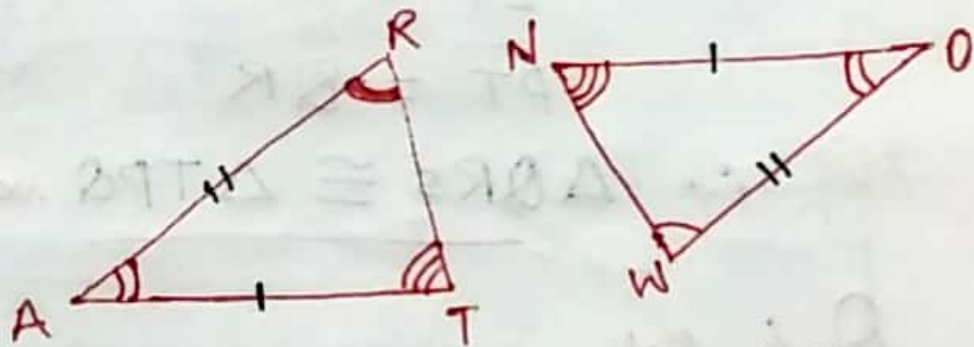
Q.5. Sol.

Given that,

$AT = ON$

$AR = OW$

$\angle A = \angle O, \angle R = \angle W, \angle T = \angle N$

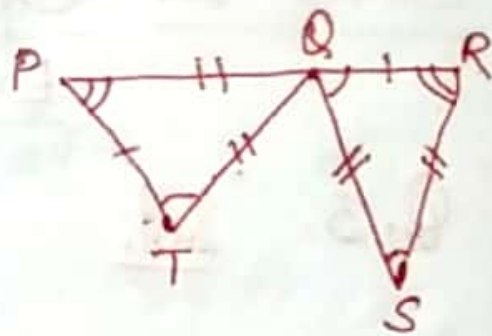
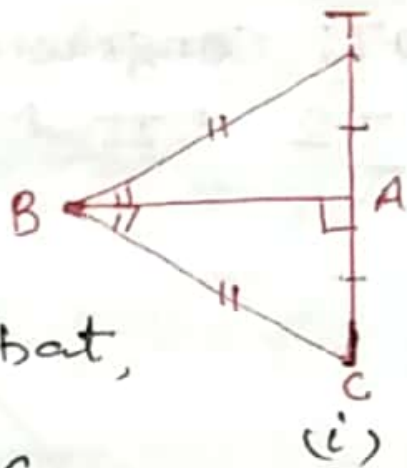


Then, $\triangle RAT \cong \triangle WON$.

Here, By SAS congruence criterion.

$\triangle RAT \cong \triangle WON$.

Q.6. Sol.



(i) Given that,

$$BT = TC$$

$$AT = AC$$

$$\angle TBA = \angle CBA$$

$$\therefore \underline{\Delta BCA \cong \Delta BTA.}$$

(ii) Given that,

$$\angle P = \angle R$$

$$\angle T = \angle S$$

$$PT = QR$$

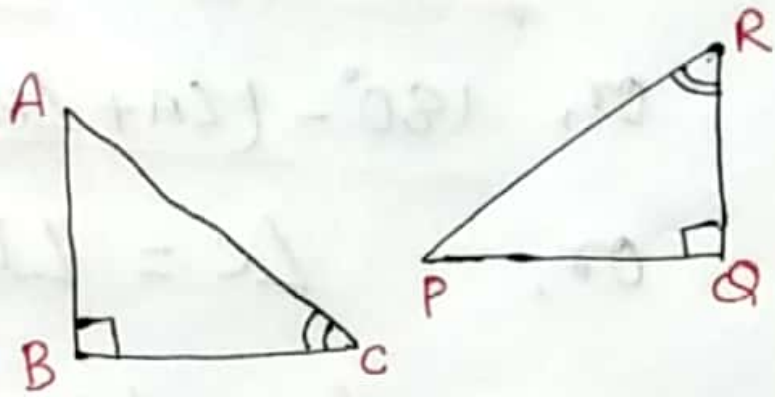
$$\therefore \underline{\Delta QRS \cong \Delta TPQ.}$$

Q.4. Sol.

No, AAA Congruence criterion is not sufficient to say that two triangles are congruent because angle shows the direction of any triangle and not its size.

Q. 8. Sol.

For $\triangle ABC$
and $\triangle PQR$



to be congruent we must need,

$$\underline{BC = QR}$$

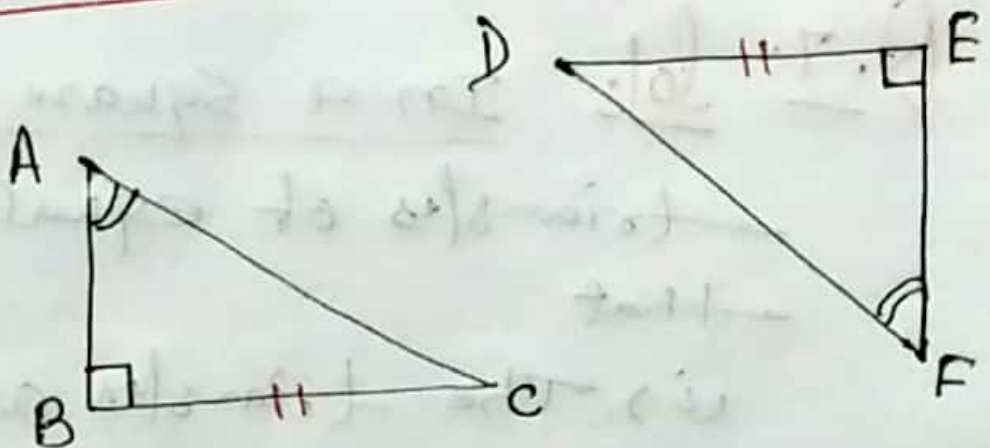
$$\therefore \underline{\angle B = \angle Q = 90^\circ}$$

And $\angle C = \angle R$ (given).

By ASA congruence criterion

$$\underline{\triangle ABC \cong \triangle PQR}.$$

Q. 9. Sol.



Given that, $\angle A = \angle F$

And $\angle B = \angle E$

Adding these, we get

$$\underline{\angle A + \angle B} = \underline{\angle F + \angle E}$$

Or, $\underline{180^\circ - (\angle A + \angle B)} = \underline{180^\circ - (\angle F + \angle E)}$

Or, $\angle C = \angle D$

Now, $\angle B = \angle E = \underline{90^\circ}$

$$BC = ED \text{ (Given)}$$

And $\angle C = \angle D$ proved.

By ASA congruence criterion,

$$\underline{\triangle ABC \cong \triangle FED}, \checkmark$$

Q. 7. Sol. In a square sheet, draw two triangles of equal areas such that

(i) The triangles are congruent, then their perimeters are equal.

(ii) The triangles are not congruent, then their perimeters are not equal.