HAND OUT

MODULE 2/3

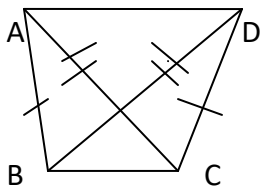
Std VII MATHEMATICS

CONGRUENCE OF TRIANGLES

1. S S S (Side Side Side) congruence : If under a given correspondence two triangles are congruent if the three sides of one triangle are equal to the three corresponding sides of another triangle, then the triangles are congruent.
   Note: The order of the letters in the names of congruent triangles displays the corresponding relationships. Thus when Δ ABC $\cong$ Δ RPQ
   A lies on R
   B lies on P
   C lies on Q
   $\overline{AB}$ along $\overline{RP}$
   $\overline{BC}$ along $\overline{PQ}$
   And $\overline{AC}$ along $\overline{RQ}$
2. S A S (Side - Angle –Side) Congruence
   If under a correspondence, two sides and the angle included between them of a triangle are equal to two corresponding sides and the angle included between them of another triangle, then the triangles are congruent.

Q1. ABC and DBC are two triangles drawn on a common base BC such that AB = DC and DB=AC on the same side of BC. Are ΔADB and ΔDAC congruent?

If yes, state the corresponding parts. Which conditions did you use to establish the congruence?



Solution: In Δ ADB and Δ DAC we have

AB = DC (given)

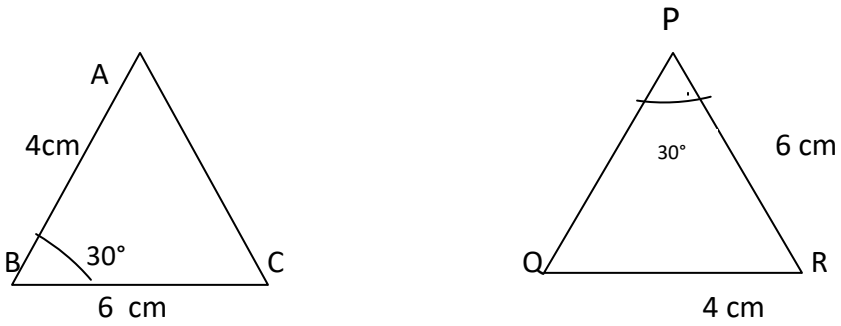
BD = CA (given)

AD = AD (common side)

ΔADB ≅ ΔDAC Also, A ↔ D, D↔ A and B↔C

Since the three corresponding equal parts are the sides of the triangle, therefore SSS congruence condition is used to prove the congruence.

Q 2. Check whether the following triangles are congruent by SAS congruence criteria?



Solution : Here we can see

AB = QR = 4 cm

BC = PR = 6 cm.

$\angle$B = 30°, $\angle$P = 30°

But $\angle$P is not the included angle of side PQ and QR.

Therefore ΔABCis not congruent to ΔPQR.

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