Congruence Ex 16.3 Q1

Answer :

1) We have OA = OC and OB = OD and∠AOB =∠COD which are vertically opposite angles.
Therefore by SAS condition, △AOC ≅ △BOD.

2) We have BD = DC
∠ADB =∠ADC = 90°
and AD = AD
Therefore by SAS condition, △ADB ≅ △ADC.

3) We have AB = DC
∠ABD = ∠CDB and BD = DB
Therefore by SAS condition, △ABD ≅ △CBD.

4) We have BC = QR
∠ABC =∠PQR = 90°
and AB = PQ
Therefore by SAS condition, △ABC ≅ △PQR.

Congruence Ex 16.3 Q2

Answer :

1) AB = AD
BC = CD
and AC = CA
Therefore by SSS condition, $\triangle ABC \cong \triangle ADC$.

2) AC = BD
AD = BC and AB = BA
Therefore by SSS condition, $\triangle ABD \cong \triangle BAC$.

3) AB = AD
$\angle BAC = \angle DAC$
and AC = AC
Therefore by SAS condition, $\triangle BAC \cong \triangle DAC$.

4) AD = BC
$\angle DAC = \angle BCA$
and AC = CA
Therefore by SAS condition, $\triangle ABC \cong \triangle ADC$.

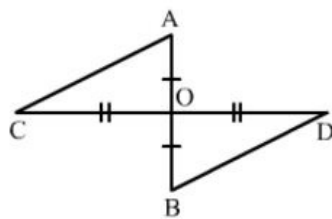## Congruence Ex 16.3 Q3

Answer :

We have AO = OB.
And CO = OD

Also ∠AOC = ∠BOD
Therefore by SAS condition, △AOC ≅ △BOD.

Therefore, statement (ii) is true.

Congruence Ex 16.3 Q4

Answer :

We have AO = OB and CO = OD since AB and CD bisect each other at O.

Also $\angle AOC = \angle BOD$ since they are opposite angles on the same vertex.
Therefore by SAS congruence condition, $\triangle AOC \cong \triangle BOD$.

********** END *********