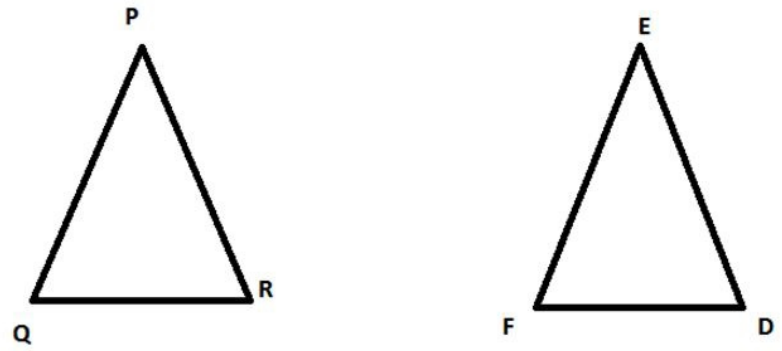
Congruence Ex 16.2 Q4

Answer :

$\triangle PQR \cong \triangle EDF$

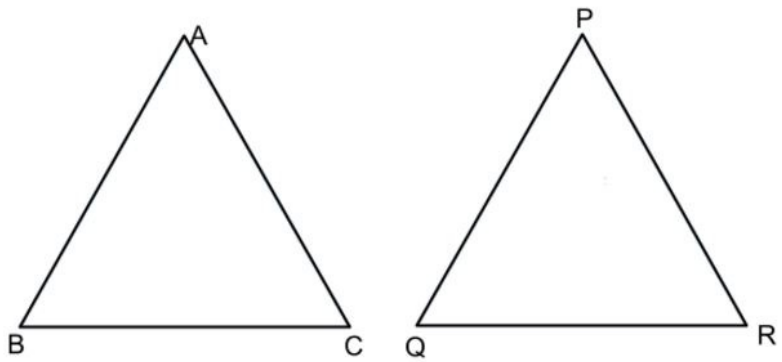
1) Therefore PR = ED since the corresponding sides of congruent triangles are equal.

2) $\angle QPR = \angle FED$ since the corresponding angles of congruent triangles are equal.



Congruence Ex 16.2 Q5

Answer :

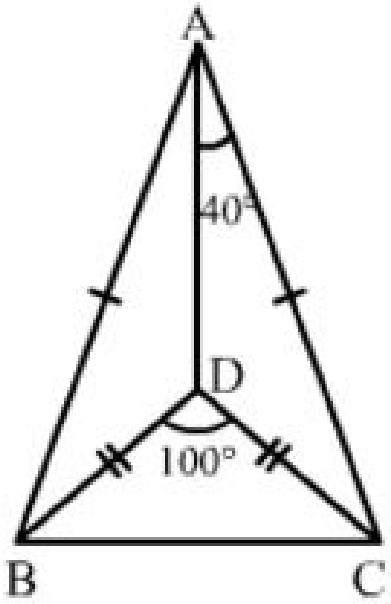


We have AB = AC in isosceles $\triangle ABC$
and PQ = PR in isosceles $\triangle PQR$.
Also, we are given that AB = PQ and QR = BC.

Therefore, AC = PR (AB = AC, PQ = PR and AB = PQ)
Hence, $\triangle ABC \cong \triangle PQR$.
Now
$\angle ABC = \angle PQR$ (Since triangles are congruent)
However, $\triangle PQR$ is isosceles.
Therefore, $\angle PRQ = \angle PQR = \angle ABC = 50^\circ$

Congruence Ex 16.2 Q6

Answer :



YES $\triangle ADB \cong \triangle ADC$ (By SSS)

AB = AC , DB = DC AND AD= DA

$\angle BAD = \angle CAD$ (c.p.c.t)

$\angle BAD + \angle CAD = 40^\circ$

$2\angle BAD = 40^\circ$

$\angle BAD = \frac{40^\circ}{2} = 20^\circ$

$\angle ABC+\angle BCA+\angle BAC = 180^\circ$ $\left(\text{Angle sum property}\right)$

Since Δ ABC is an isosceles triangle,

$\angle ABC=\angle BCA$

$\angle ABC+\angle ABC + 40^\circ = 180^\circ$

$2\angle ABC = 180^\circ - 40^\circ = 140^\circ$

$\angle ABC = \frac{140^\circ}{2} = 70^\circ$

$\angle DBC+\angle BCD+\angle BDC = 180^\circ$ $\left(\text{Angle sum property}\right)$

Since $\triangle$ABC is an isosceles triangle,

$\angle DBC=\angle BCD$

$\angle DBC+\angle DBC + 100^\circ = 180^\circ$

$2\angle DBC = 180^\circ - 100^\circ = 80^\circ$

$\angle DBC = \frac{80^\circ}{2} = 40^\circ$

In $\triangle$BAD,

$\angle ABD+\angle BAD+\angle ADB = 180^\circ (\text{Angle sum property})$

$30^\circ + 20^\circ + \angle ADB = 180^\circ$ $\left(\angle ABD=\angle ABC-\angle DBC\right)$

$\angle ADB = 180^\circ - 20^\circ - 30^\circ$

$\angle ADB = 130^\circ$

$\angle \boldsymbol{ADB} = 130^\circ$

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