



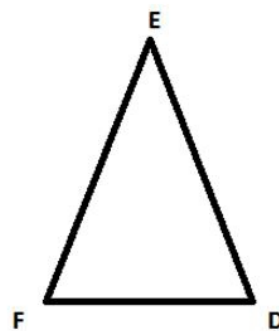
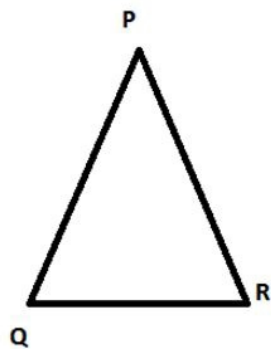
Congruence Ex 16.2 Q4

Answer :

$$\triangle PQR \cong \triangle EDF$$

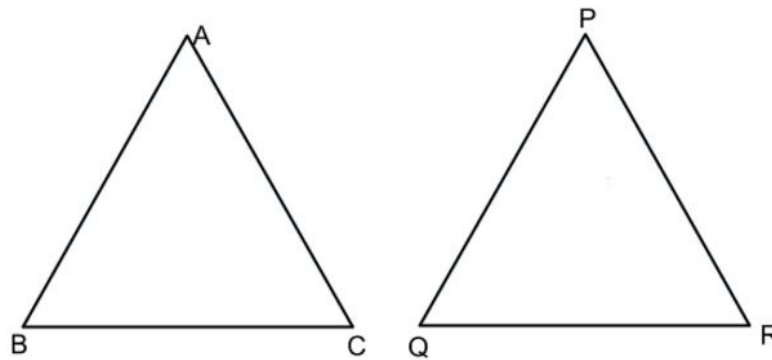
1) Therefore $PR = ED$ since the corresponding sides of congruent triangles are equal.

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

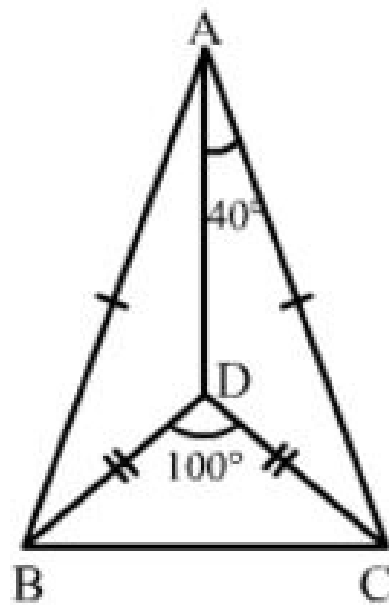
$\angle ABC = \angle PQR$ (Since triangles are congruent)

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 $AD = DA$

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

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

$$2\angle BAD = 40^\circ$$

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

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

Since $\triangle ABC$ is an isosceles triangle,

$$\angle ABC = \angle BCA$$

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

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

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

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

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 $\triangle BAD$,

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

$$30^\circ + 20^\circ + \angle ADB = 180^\circ \text{ } (\angle ABD = \angle ABC - \angle DBC)$$

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

$$\angle ADB = 130^\circ$$

$$\angle ADB = 130^\circ$$

***** END *****