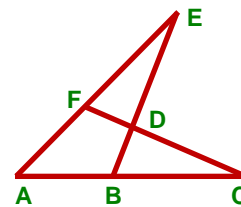


**Geometric Proofs #7 – Overlapping Congruent Triangles**

**Given:**  $\triangle CDB \cong \triangle EDF$  and  $\overline{AB} \cong \overline{AF}$

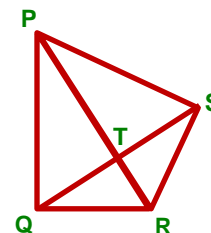
**Prove:**  $\triangle BAE \cong \triangle FAC$



Step	Statement	Step	Reason
1)	$\triangle CDB \cong \triangle EDF$	1)	Given
2)	$\angle C \cong \angle E$	2)	CPCTC
3)	$\overline{AB} \cong \overline{AF}$	3)	Given
4)	$\angle A \cong \angle A$	4)	Reflexive Property
5)	$\triangle BAE \cong \triangle FAC$	5)	AAS (from steps 2, 3, and 4)

**Given:**  $\overline{PQ} \perp \overline{QR}$  and  $\overline{PS} \perp \overline{SR}$  and  $\angle TQR \cong \angle TSR$

**Prove:**  $\overline{PQ} \cong \overline{PS}$



Step	Statement	Step	Reason
1)	$\overline{PQ} \perp \overline{QR}, \overline{PS} \perp \overline{SR}$	1)	Given
2)	$m\angle PQR = 90^\circ, m\angle PSR = 90^\circ$	2)	Definition of Perpendicular Lines
3)	$\triangle PQR$ and $\triangle PSR$ are right triangles	3)	Definition of Right Triangle
4)	$\overline{PR} \cong \overline{PR}$	4)	Reflexive Property
5)	$\angle TQR \cong \angle TSR$	5)	Given
6)	$\overline{QR} \cong \overline{SR}$	6)	Two congruent $\Delta$ angles $\rightarrow$ congruent opposite sides
7)	$\triangle PQR \cong \triangle PSR$	7)	HL (from steps 3, 4, and 6)
8)	$\overline{PQ} \cong \overline{PS}$	8)	CPCTC