Geometric Proofs #4 – Triangle Sums

Line **L** is drawn to aid in the proof.
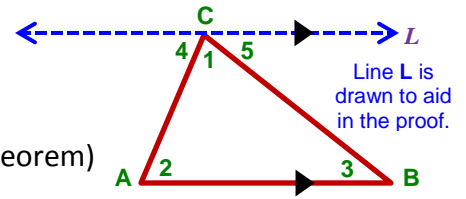
Given: $\triangle ABC$ **Prove**: $m\angle 1 + m\angle 2 + m\angle 3 = 180°$ (Triangle Sum Theorem)

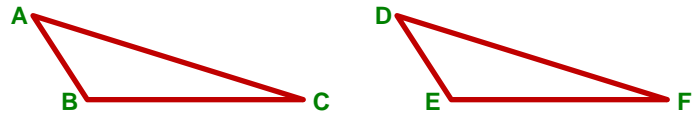| Step	Statement	Step	Reason
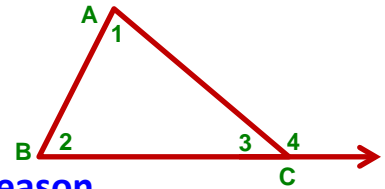
Given: $\triangle ABC$ **Prove**: $m\angle 4 = m\angle 1 + m\angle 2$ (Exterior Angle Theorem)

Step	Statement	Step	Reason

Given: $\triangle ABC$, $\triangle DEF$, $\angle A \cong \angle D$, $\angle B \cong \angle E$
Prove: $\angle C \cong \angle F$ (Third Angle Theorem)

Step	Statement	Step	Reason