Proving Triangles are Congruent Using Postulates :

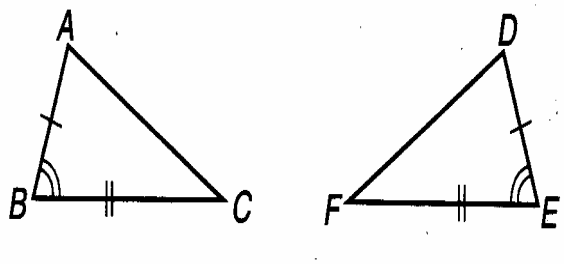
It is not necessary to compare all six pairs of corresponding parts of two triangles to prove they are congruent. A postulate (rule) can be used to prove two triangles are congruent by comparing only three pairs of corresponding parts.

Postulates

- Side-Side-Side Congruence Postulate (SSS): Two triangles are congruent if the three sides of one triangle are congruent to the corresponding three sides of the other triangle.
- Side-Angle-Side Congruence Postulate (SAS): Two triangles are congruent if two angles and the included side of one triangle are congruent to the corresponding two angles and included side of the other triangle.
- Angle-Side-Angle Congruence Postulate (ASA): Two triangles are congruent if two angles and the included side of one triangle are congruent of the corresponding two angles and included side of the other triangle.
- Angle-Angle-Side Congruence Postulate (AAS): Two triangles are congruent if two angles and a non-included side of one triangle are congruent to the corresponding two angles and non-included side of the other triangle.

Example:

Is $\triangle ABC$ congruent to $\triangle DEf$?



Compare the sides and angles of the two triangles.

$\overline{AB} \cong \overline{DE}$

$\overline{BC} \cong \overline{EF}$

$\angle B \cong \angle E$

$\angle B$ is the included angle formed by $\overline{AB}$ and $\overline{BC}$.

$\angle E$ is the included angle formed by $\overline{DE}$ and $\overline{EF}$.

Therefore SAS congruence postulate proves that the triangles are congruent.