

CPCTC (Corresponding Parts of Congruent Triangles are Congruent)

Definition

CPCTC is a reasoning principle used in geometric proofs that states if two triangles are proven congruent, then all of their corresponding sides and angles are also congruent.

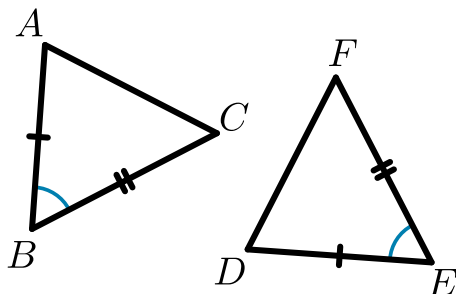
Key points:

- CPCTC is usually applied **after** establishing triangle congruence through a postulate or theorem (SSS, SAS, ASA, AAS, or HL).
- It allows you to conclude that specific sides or angles are congruent.
- Often used as the final step in a triangle congruence proof.

Proof Example

Given $\overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \angle B \cong \angle E$

Prove $\overline{AC} \cong \overline{DF}$



Statements	Reasons
1. $\overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \angle B \cong \angle E$	1. Given
2. $\triangle ABC \cong \triangle DEF$	2. SAS
3. $\overline{AC} \cong \overline{DF}$	3. CPCTC

The only way we know sides AC and DF are congruent is because we know the entire triangles are congruent.

This is because congruent triangles have all corresponding angles and sides congruent. This is what CPCTC is.

