# Corresponding Parts of Congruent Triangles are Congruent

# CPCTC

HSG.CO.B.7

**Goal:** I can apply CPCTC in triangle proofs.

**Essential Questions:**

1.) What is CPCTC and when do you use it?

2.) At what point in a proof do use CPCTC?

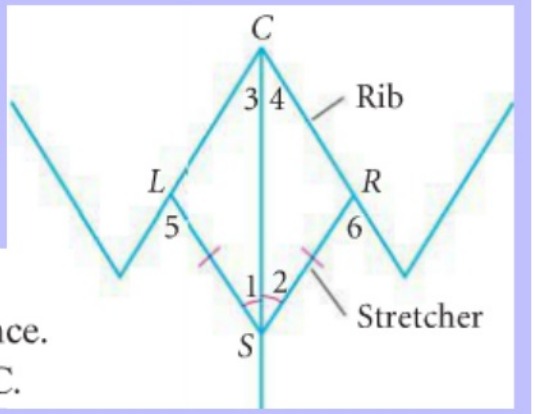
3.) How do you know when to use CPCTC?

# 4-4 Using Congruent Triangles: CPCTC

HSG.CO.B.7

**Goal:** I can apply CPCTC in triangle proofs.

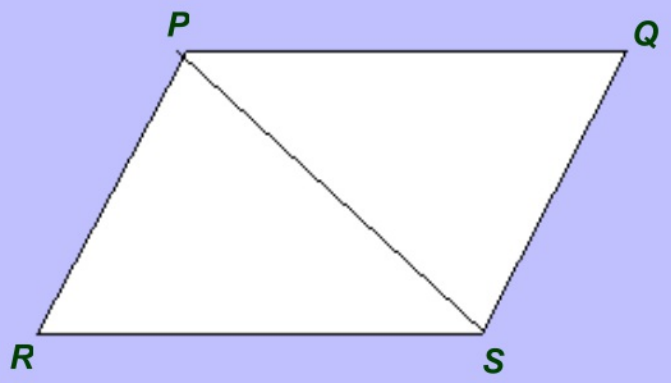
Once you know triangles are congruent, you can make conclusions about their other parts because by definition, corresponding parts of congruent triangles are congruent (CPCTC).




✔ What other congruence statements can you prove from the diagram and paragraph proof in example 1?

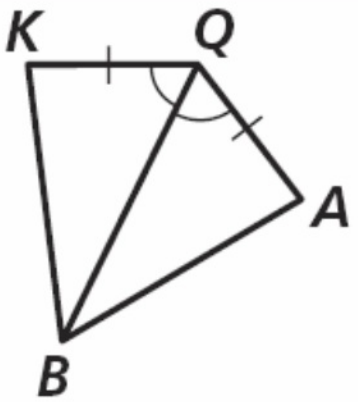
**Proof:** It is given that $\overline{SL} \cong \overline{SR}$ and $\angle 1 \cong \angle 2$.
$\overline{SC} \cong \overline{SC}$ by the Reflexive Property of Congruence.
$\triangle LSC \cong \triangle RSC$ by SAS, so $\angle 3 \cong \angle 4$ by CPCTC.

✔ Given: $\angle Q \cong \angle R$, $\angle QPS \cong \angle RSP$
Prove: $SQ \cong PR$



**Goal:** To learn and apply the CPCTC in triangle proofs.

## Exercises




**Complete the two-column proof.**

**1.** Given: $\overline{QK} \cong \overline{QA}$; $\overrightarrow{QB}$ bisects $\angle KQA$
Prove: $\overline{KB} \cong \overline{AB}$

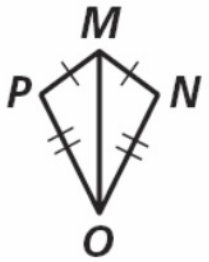
| *Statements* | *Reasons* |
|---|---|
| **a.** ? | **1.** Given |
| **2.** $\angle KQB \cong \angle AQB$ | **b.** ? |
| **c.** ? | **3.** Reflexive Property of $\cong$ |
| **4.** $\triangle KBQ \cong \triangle ABQ$ | **d.** ? |
| **5.** $\overline{KB} \cong \overline{AB}$ | **e.** ? |

**Goal:** To learn and apply the CPCTC in triangle proofs.

**Write a two-column proof.**

**2.** Given: $\overline{MN} \cong \overline{MP}$, $\overline{NO} \cong \overline{PO}$

Prove: $\angle N \cong \angle P$



**Goal:** To learn and apply the CPCTC in triangle proofs.

**Write a two-column proof.**

**3.** Given: $\overline{ON}$ bisects $\angle JOH$, $\angle J \cong \angle H$

Prove: $\overline{JN} \cong \overline{HN}$