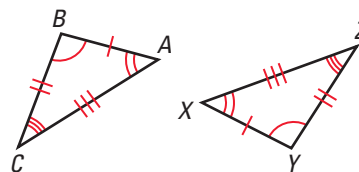


EXAMPLE When two figures are congruent, their corresponding sides and corresponding angles are congruent. In the diagram, $\triangle ABC \cong \triangle XYZ$.

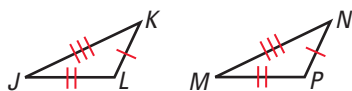


Use the diagram above of $\triangle ABC$ and $\triangle XYZ$.

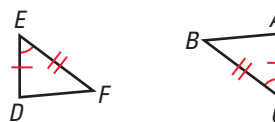
- Identify the congruent corresponding parts of the triangles.
- Given $m\angle A = 48^\circ$ and $m\angle Z = 37^\circ$, find $m\angle Y$.

PROVING TRIANGLES ARE CONGRUENT: SSS, SAS, ASA, AND AAS

EXAMPLES You can prove triangles are congruent using congruence postulates and theorems.



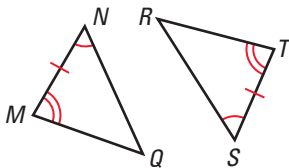
$\overline{JK} \cong \overline{MN}$, $\overline{KL} \cong \overline{NP}$, $\overline{JL} \cong \overline{MP}$,
so $\triangle JKL \cong \triangle MNP$ by the SSS
Congruence Postulate.



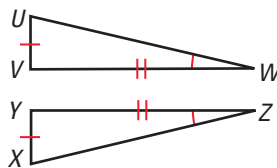
$\overline{DE} \cong \overline{AC}$, $\angle E \cong \angle C$, and
 $\overline{EF} \cong \overline{CB}$, so $\triangle DEF \cong \triangle ACB$
by the SAS Congruence Postulate.

Decide whether it is possible to prove that the triangles are congruent. If it is possible, tell which postulate or theorem you would use. Explain your reasoning.

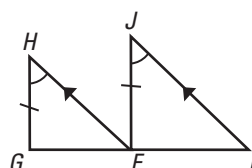
9.



10.



11.

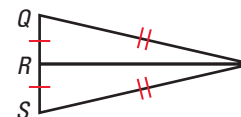


USING CONGRUENT TRIANGLES

EXAMPLE You can use congruent triangles to write proofs.

GIVEN $\triangleright \overline{PQ} \cong \overline{PS}$, $\overline{RQ} \cong \overline{RS}$

PROVE $\triangleright \overline{PR} \perp \overline{QS}$



Plan for Proof Use the SSS Congruence Postulate to show that $\triangle PRQ \cong \triangle PRS$. Because corresponding parts of congruent triangles are congruent, you can conclude that $\angle PRQ \cong \angle PRS$. These angles form a linear pair, so $\overline{PR} \perp \overline{QS}$.