

## Reteaching : Section 7-2

### Triangle Congruence by SSS and SAS

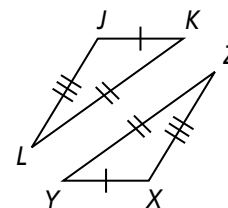
You can prove that triangles are congruent using the two postulates below.

#### Postulate 4-1: Side-Side-Side (SSS) Postulate

If all three sides of a triangle are congruent to all three sides of another triangle, then those two triangles are congruent.

If  $\overline{JK} \cong \overline{XY}$ ,  $\overline{KL} \cong \overline{YZ}$ , and  $\overline{JL} \cong \overline{XZ}$ , then  $\triangle JKL \cong \triangle XYZ$ .

In a triangle, the angle formed by any two sides is called the *included angle* for those sides.

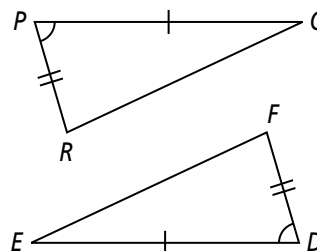


#### Postulate 4-2: Side-Angle-Side (SAS) Postulate

If two sides and the included angle of a triangle are congruent to two sides and the included angle of another triangle, then those two triangles are congruent.

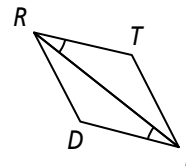
If  $\overline{PQ} \cong \overline{DE}$ ,  $\overline{PR} \cong \overline{DF}$ , and  $\angle P \cong \angle D$ , then  $\triangle PQR \cong \triangle DEF$ .

$\angle P$  is included by  $\overline{QP}$  and  $\overline{PR}$ .  $\angle D$  is included by  $\overline{ED}$  and  $\overline{DF}$ .

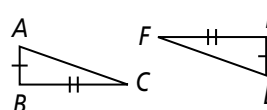


### Exercises

1. What other information do you need to prove  $\triangle TRF \cong \triangle DFR$  by SAS? Explain.



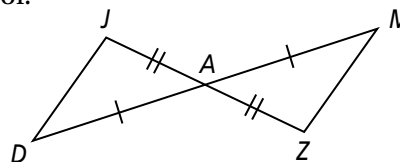
2. What other information do you need to prove  $\triangle ABC \cong \triangle DEF$  by SAS? Explain.



3. **Developing Proof** Copy and complete the flow proof.

**Given:**  $\overline{DA} \cong \overline{MA}$ ,  $\overline{AJ} \cong \overline{AZ}$

**Prove:**  $\triangle JDA \cong \triangle ZMA$



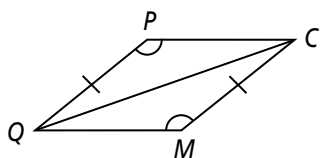
?	→	$\triangle JDA \cong \triangle ZMA$
Given	→	
$\overline{AJ} \cong \overline{AZ}$	→	
?	→	
?	→	?
Vertical $\sphericalangle$ are $\cong$ .		

## Reteaching (continued)

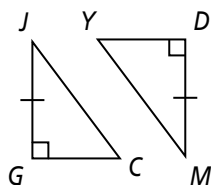
### Triangle Congruence by SSS and SAS

Would you use SSS or SAS to prove the triangles congruent? If there is not enough information to prove the triangles congruent by SSS or SAS, write *not enough information*. Explain your answer.

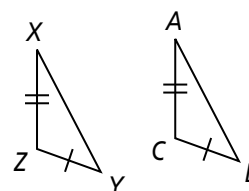
4.



5.

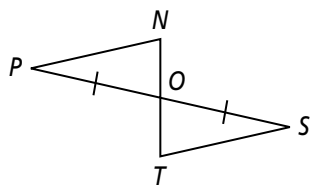


6.



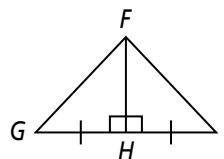
7. **Given:**  $\overline{PO} \cong \overline{SO}$ ,  $O$  is the midpoint of  $\overline{NT}$ .

**Prove:**  $\triangle NOP \cong \triangle TOS$

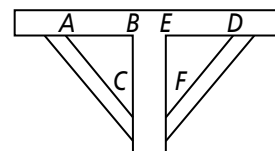


8. **Given:**  $\overline{HI} \cong \overline{HG}$ ,  $\overline{FH} \perp \overline{GI}$

**Prove:**  $\triangle FHI \cong \triangle FHG$



9. A carpenter is building a support for a bird feeder. He wants the triangles on either side of the vertical post to be congruent. He measures and finds that  $\overline{AB} \cong \overline{DE}$  and that  $\overline{AC} \cong \overline{DF}$ . What would he need to measure to prove that the triangles are congruent using SAS? What would he need to measure to prove that they are congruent using SSS?



10. An artist is drawing two triangles. She draws each so that two sides are 4 in. and 5 in. long and an angle is  $55^\circ$ . Are her triangles congruent? Explain.