

4-4 Lesson Reading Guide

Proving Congruence—SSS, SAS

Get Ready for the Lesson

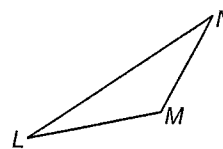
Read the introduction to Lesson 4-4 in your textbook.

Why do you think that land surveyors would use congruent right triangles rather than other congruent triangles to check a measurement?

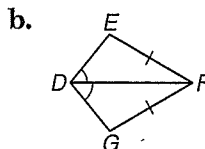
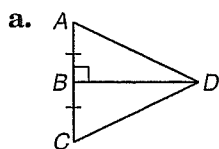
Read the Lesson

1. Refer to the figure.

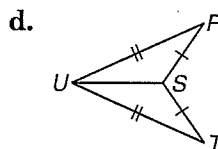
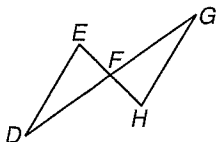
- Name the sides of $\triangle LMN$ for which $\angle L$ is the included angle.
- Name the sides of $\triangle LMN$ for which $\angle N$ is the included angle.
- Name the sides of $\triangle LMN$ for which $\angle M$ is the included angle.



2. Determine whether you have enough information to prove that the two triangles in each figure are congruent. If so, write a congruence statement and name the congruence postulate that you would use. If not, write *not possible*.



c. \overline{EH} and \overline{DG} bisect each other.



Remember What You Learned

3. Find three words that explain what it means to say that two triangles are congruent and that can help you recall the meaning of the SSS Postulate.

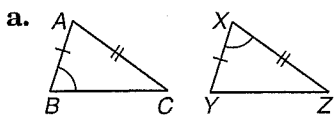
4-4 Study Guide and Intervention *(continued)*

Proving Congruence—SSS, SAS

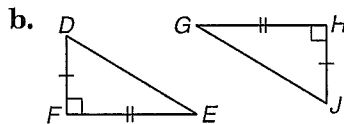
SAS Postulate Another way to show that two triangles are congruent is to use the Side-Angle-Side (SAS) Postulate.

SAS Postulate	If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent.
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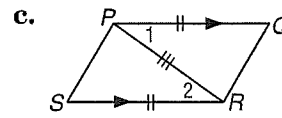
Example For each diagram, determine which pairs of triangles can be proved congruent by the SAS Postulate.



In $\triangle ABC$, the angle is not “included” by the sides \overline{AB} and \overline{AC} . So the triangles cannot be proved congruent by the SAS Postulate.



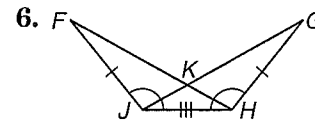
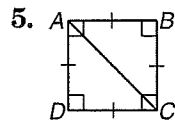
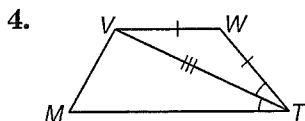
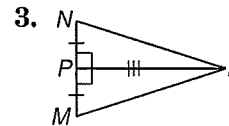
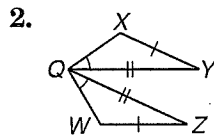
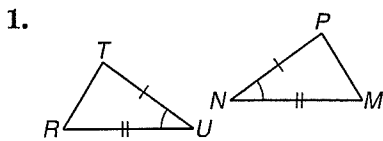
The right angles are congruent and they are the included angles for the congruent sides. $\triangle DEF \cong \triangle JGH$ by the SAS Postulate.



The included angles, $\angle 1$ and $\angle 2$, are congruent because they are alternate interior angles for two parallel lines. $\triangle PSR \cong \triangle RQP$ by the SAS Postulate.

Exercises

For each figure, determine which pairs of triangles can be proved congruent by the SAS Postulate.



4-4

Lesson Reading Guide

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Get Ready for the Lesson

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Why do you think that land surveyors would use congruent right triangles rather than other congruent triangles to check a measurement?

Read the Lesson

1. Refer to the figure.

a. Name the sides of $\triangle LMN$ for which $\angle L$ is the included angle.

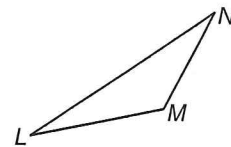
LN and LM

b. Name the sides of $\triangle LMN$ for which $\angle N$ is the included angle.

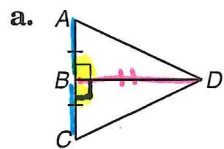
LN and NM

c. Name the sides of $\triangle LMN$ for which $\angle M$ is the included angle.

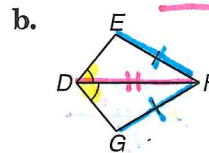
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2. Determine whether you have enough information to prove that the two triangles in each figure are congruent. If so, write a congruence statement and name the congruence postulate that you would use. If not, write *not possible*.

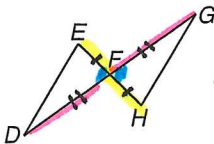


SAS

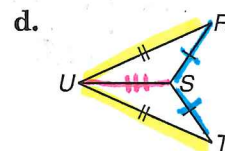


not enough info

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SAS



SSS

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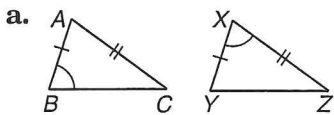
4-4 Study Guide and Intervention *(continued)*

Proving Congruence—SSS, SAS

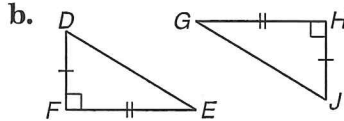
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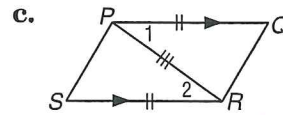
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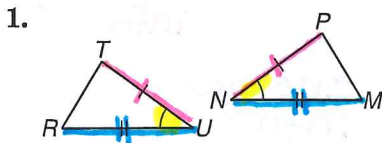
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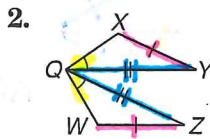
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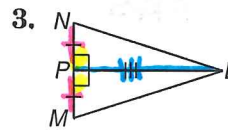
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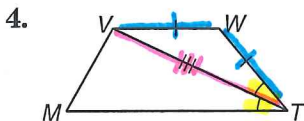
SAS
 $\triangle TUR \cong \triangle PNM$



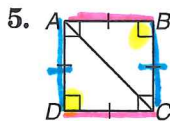
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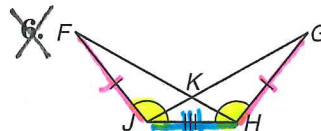
SAS
 $\triangle LPN \cong \triangle LPM$



Not enough info



SAS
 $\triangle ABC \cong \triangle CDA$



$\triangle FJH \cong \triangle GHJ$
 by SAS