

Name _____

Date _____

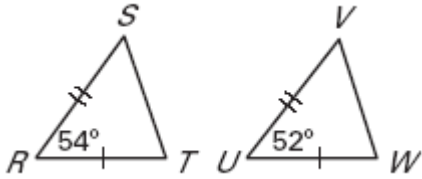
LESSON 5.6

Practice B

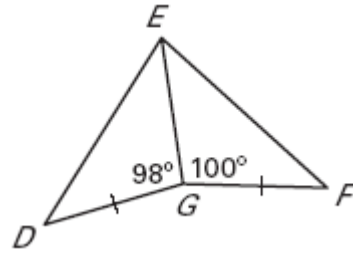
For use with pages 335–341

Complete with $<$, $>$, or $=$. Explain.

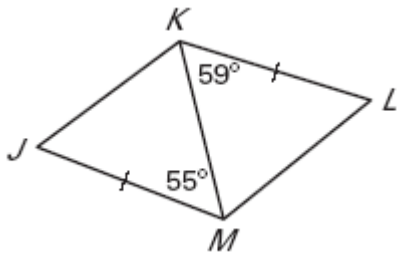
1. ST _____ VW



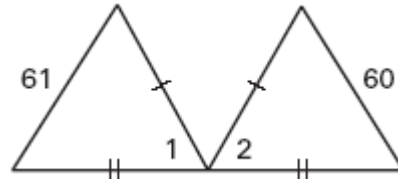
2. DE _____ EF



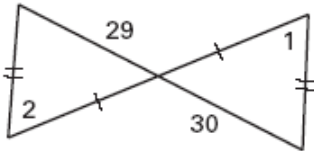
3. JK _____ LM



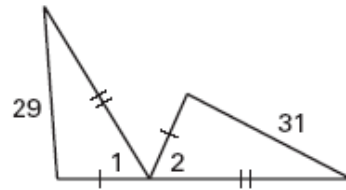
4. $m\angle 1$ _____ $m\angle 2$



5. $m\angle 1$ _____ $m\angle 2$

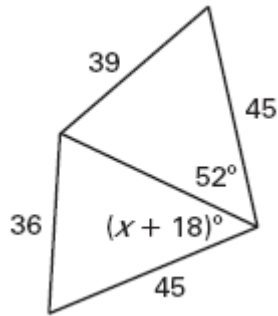


6. $m\angle 1$ _____ $m\angle 2$

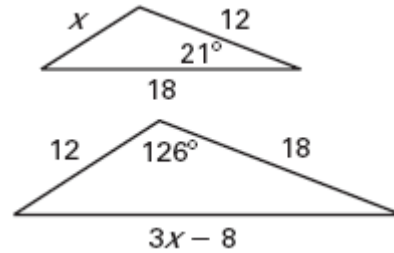


Use the Hinge Theorem or its converse and properties of triangles to write and solve an inequality to describe a restriction on the value of x .

7.



8.



Write a temporary assumption you could make to prove the conclusion indirectly.

9. If two lines in a plane are parallel, then the two lines do not contain two sides of a triangle.

10. If two parallel lines are cut by a transversal so that a pair of consecutive interior angles is congruent, then the transversal is perpendicular to the parallel lines.

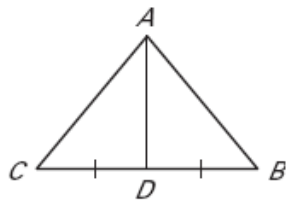
11. **Indirect Proof** Arrange statements A–F in order to write an indirect proof of Case 1.

GIVEN: \overline{AD} is a median of $\triangle ABC$.

$$\angle ADB \cong \angle ADC$$

PROVE: $AB = AC$

Case 1:



- A. Then $m\angle ADB < m\angle ADC$ by the converse of the Hinge Theorem.
- B. Then $\overline{BD} \cong \overline{CD}$ by the definition of midpoint. Also, $\overline{AD} \cong \overline{AD}$ by the reflexive property.
- C. This contradiction shows that the temporary assumption that $AB < AC$ is false.
- D. But this contradicts the given statement that $\angle ADB \cong \angle ADC$.
- E. Because \overline{AD} is a median of $\triangle ABC$, D is the midpoint of \overline{BC} .
- F. Temporarily assume that $AB < AC$.