

5-5 Study Guide and Intervention

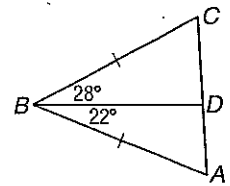
Inequalities Involving Two Triangles

SAS Inequality The following theorem involves the relationship between the sides of two triangles and an angle in each triangle.

<p>SAS Inequality/Hinge Theorem</p>	<p>If two sides of a triangle are congruent to two sides of another triangle and the included angle in one triangle has a greater measure than the included angle in the other, then the third side of the first triangle is longer than the third side of the second triangle.</p>	
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Example Write an inequality relating the lengths of \overline{CD} and \overline{AD} .

Two sides of $\triangle BCD$ are congruent to two sides of $\triangle BAD$ and $m\angle CBD > m\angle ABD$. By the SAS Inequality/Hinge Theorem, $CD > AD$.



Exercises

Write an inequality relating the given pair of segment measures.

1.
 MR, RP

2.
 AD, CD

3.
 EG, HK

4.
 MR, PR

Write an inequality to describe the possible values of x .

5.
 $(4x - 10) \text{ cm}$

6.
 $(3x - 2.1) \text{ cm}$