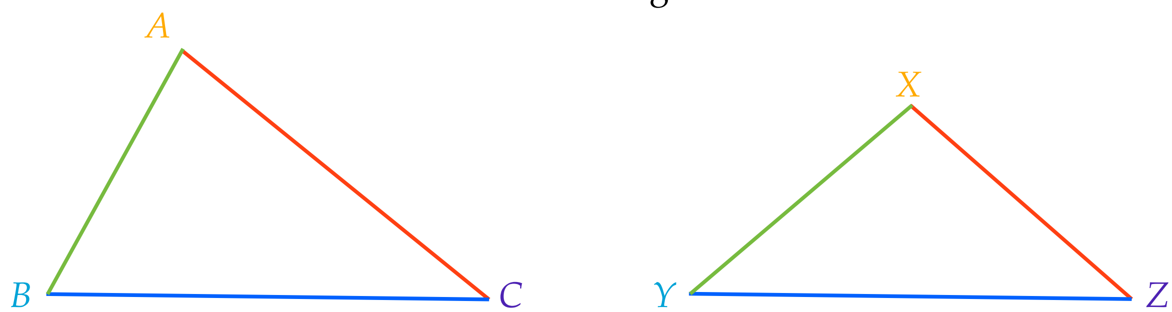
Side-Angle-Side Inequality Theorem (Hinge Theorem)

Name ________________________

Date ______________ Period _____

If two sides of one triangle are congruent to two sides of another triangle and the included angle of the first triangle is greater than the included angle of the second triangle, then the third side of the first triangle is longer than the third side of the second triangle.



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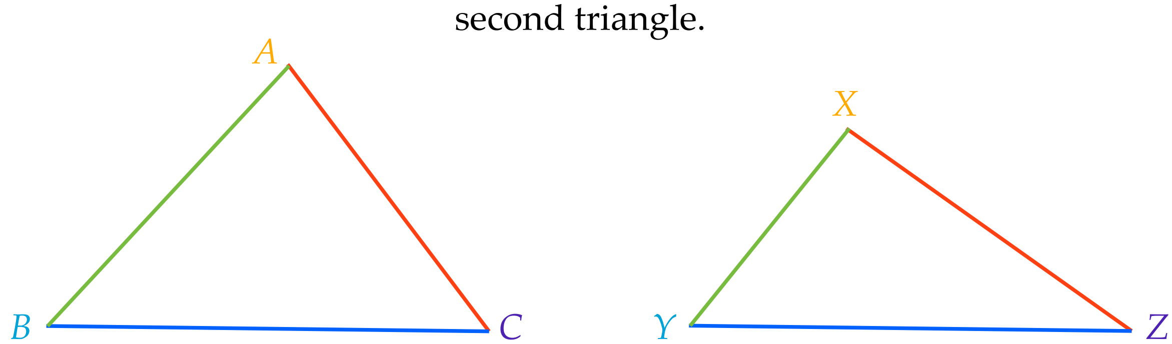
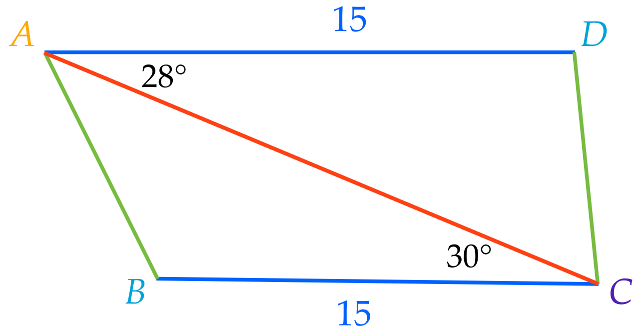


What conclusion can be made…



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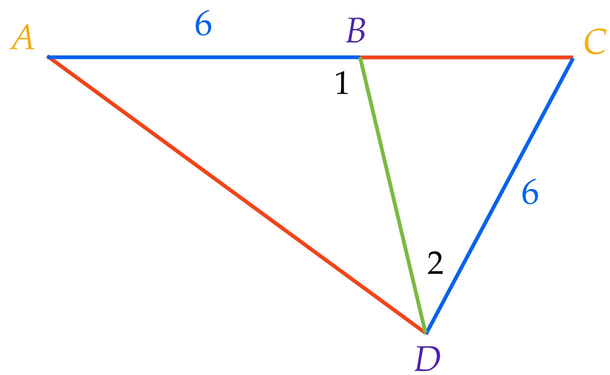
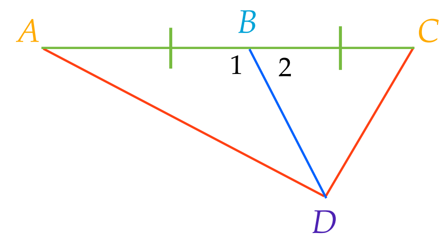


Statements	Reasons

Given: $\overline{BD}$ is a median of ΔACD

$m\angle 1 > m\angle 2$

Prove: $AD > CD$



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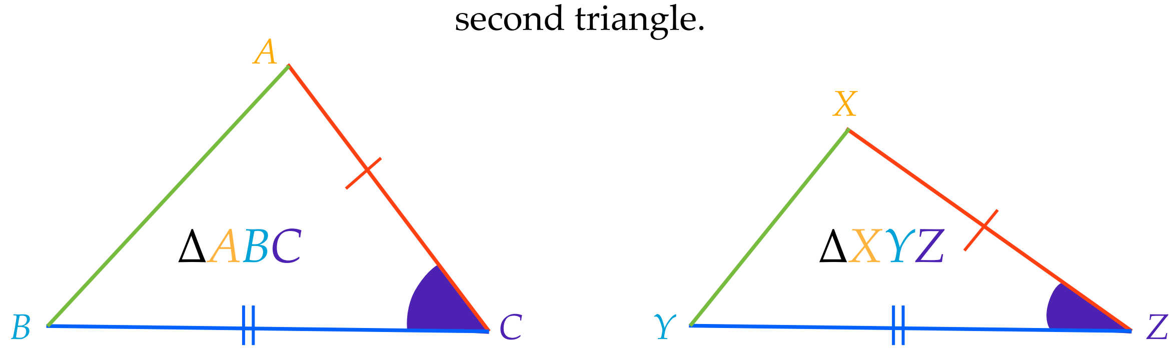

If $\overline{AC} \cong \overline{XZ}$, $\overline{BC} \cong \overline{YZ}$, and $m\angle C > m\angle Z$, then $AB > XY$