

Challenge Problems

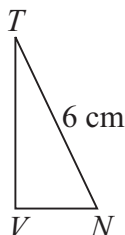
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NAME _____

Module 8 Points, Lines, Angles, and Triangles
Lesson 5 Congruent Triangles

Set 1

- 1 True or false: Given $\triangle VNT \cong \triangle RMS$, and side \overline{NT} measures six centimeters, then side \overline{RS} also measures six centimeters.

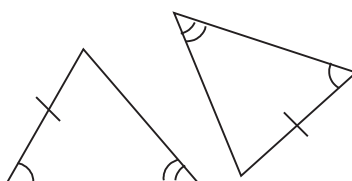


- 2 True or false: If $\triangle SLN \cong \triangle WLB$ and $\triangle SLN$ is an acute triangle, then $\triangle WLB$ is an acute triangle.

Set 2

- 1 True or false: All equiangular triangles are congruent. Explain.

- 2 True or false: Angle-Angle-Side Congruence can be used to prove that two triangles are congruent.



Possible Answers

Set 1

1. **False:** If side \overline{NT} is six centimeters, then you can only conclude that the corresponding side of $\triangle RMS$, which is \overline{MS} , is also six centimeters.
2. **True:** Congruent triangles have three pairs of equal angles. So if the angles of $\triangle SLN$ are all acute, then the angles of $\triangle WLB$ are also acute.

Set 2

1. **False:** All equiangular triangles have three 60° angles, but because the triangles may be of different sizes, they will not all have congruent sides.
2. **True:** The sum of the angles of a triangle is exactly 180° , so if two triangles have two pairs of congruent angles, then the third pair of angles will also be congruent. Therefore, Angle-Angle-Side Congruence is equivalent to Angle-Side-Angle Congruence.