NAME_____

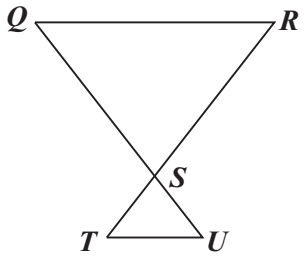
Module 8 **Points, Lines, Angles, and Triangles**
Lesson 6 **Similar Triangles**

Challenge Problems 8.6

Set 1

1. Explain why all congruent triangles are similar, but not all similar triangles are congruent.

2. Explain why $\triangle QRS \sim \triangle UTS$, given that $\overline{QR} \parallel \overline{TU}$.



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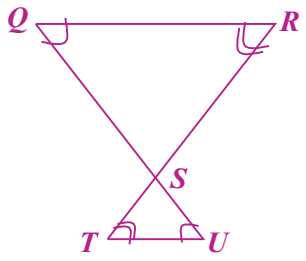
Possible Answers

Set 1

1. All congruent triangles are similar because all their angles are congruent and their sides are in one to one proportion. Similar triangles might not be congruent because the lengths of their sides can be different. They just have to be proportional. Congruent triangles are the same shape and the same size. Similar triangles are just the same shape.

2. $\overline{QU}$ and $\overline{RT}$ are transversals cutting two parallel lines, so the alternate interior angles are congruent. With $\overline{QU}$ as a transversal, $\angle Q \cong \angle U$. With $\overline{RT}$ as a transversal, $\angle R \cong \angle T$. The triangles are congruent by the AA Similarity rule. $\angle QSR$ and $\angle UST$ are also congruent because they are vertical angles.



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