Name_____ Date_____

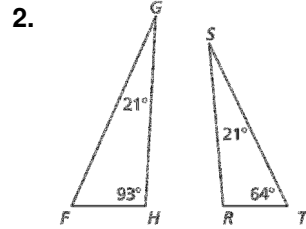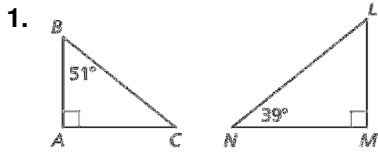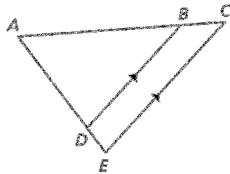**In Exercises 1 and 2, determine whether the triangles are similar. If they are, write a similarity statement. Explain your reasoning.**

**1.**



**2.**
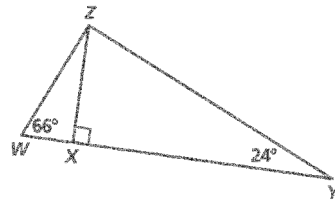


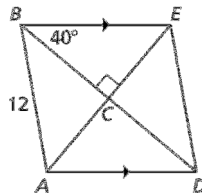**In Exercises 3 and 4, show that the two triangles are similar.**

**3.** $\triangle ABD$ and $\triangle ACE$



**4.** $\triangle WXZ$ and $\triangle ZXY$





**5.** In the diagram, $\triangle ABC \sim \triangle EDC$.

 **a.** Is $\overline{AB} \parallel \overline{DE}$? Explain your reasoning.

 **b.** Show that $\triangle ACD \sim \triangle ECB$.

 **c.** Find $m\angle CAD$.

 **d.** Find $ED$.

 **e.** Find $AD$. Explain your reasoning.

**In Exercises 6 and 7, is it possible for** $\triangle ABC$ **and** $\triangle XYZ$ **to be similar? Explain your reasoning.**

6. $m\angle A = 43°$, $m\angle B = 61°$, $m\angle Y = 61°$, and $m\angle Z = 74°$

7. $\angle A$ and $\angle X$ are right angles and $\angle B \cong \angle Z$.

8. Use the figure to write a two-column proof.

   **Given:** $\angle Q \cong \angle T$

   **Prove:** $\overline{PQ} \parallel \overline{ST}$