For Problems 1–3, apply properties of similar figures.

1. Devon says that triangles $TUV$ and $XYZ$ are similar because $\frac{TU}{XY} = \frac{UV}{YZ} = \frac{XZ}{TV}$. What is wrong with his reasoning?

2. Triangles $CDE$ and $FGH$ are similar. Write three proportions relating the triangles’ side lengths, and three statements about their angle measures.

3. Are all rhombuses similar? Explain your answer.

Use the diagram for Problems 4 and 5.

4. In the diagram of the tandem bike, $\overline{AE} \parallel \overline{BD}$. Explain why $\triangle CBD \sim \triangle CAE$.

5. Find $CE$ to the nearest tenth. Show your work.

For Problems 6 and 7, show that the figures are similar by using a ruler to find the center of dilation. Name the center point.

6. (___, ___)  

7. (___, ___)
4. smaller  
5. 80; 20; 2  
6. transformations; similar  

**Reading Strategies**  
1. Sequence of transformations: reflection and dilation  
2. Single dilation  

**Success for English Learners**  
1. A reduction  
2. \( X \) is the image of \( Q \), so \( X \) should lie at \((2 \times 2.5, 4 \times 2.5)\), or \((5, 10)\).  

**LESSON 11-3**  

**Practice and Problem Solving: A/B**  
1. He has switched the side lengths of the triangles in the last ratio of the proportion.  
2. Possible answers:  
   \[
   \frac{CD}{FG} = \frac{DE}{GH}; \quad \frac{CD}{FG} = \frac{CE}{GH}; \quad \frac{DE}{GH} = \frac{CE}{FH}; \\
   m\angle C = m\angle F; \quad m\angle D = m\angle G; \quad m\angle E = m\angle H 
   \]
3. No. The side lengths of all rhombuses are proportional, but the angles can vary.  
4. \( \angle CBD \cong \angle CAE \) by Corresponding Angles Theorem. \( \angle C \cong \angle C \) by the Reflexive Property. So \( \triangle CBD \cong \triangle CAE \) by AA.  
5. \( \frac{6}{14} = \frac{20}{CE} \); \( CE = (20 \times 14) \div 6 \approx 46.7 \text{ in.} \)  
6. \((6, -4)\)  

**Practice and Problem Solving: C**  
1. \[
   \frac{CD}{FG} = \frac{DE}{GH}; \quad \frac{CD}{FG} = \frac{CE}{GH}; \quad \frac{DE}{GH} = \frac{CE}{FH}; \\
   m\angle C = m\angle F; \quad m\angle D = m\angle G; \quad m\angle E = m\angle H 
   \]
2. Possible answer: \[
   \frac{CD}{FG} = \frac{DE}{GH} \quad \text{and} \quad \frac{w}{z} = \frac{x}{y}; \quad \frac{w}{z} = \frac{x}{y}. 
   \]
3. 9  
4. No. \( \frac{WX}{XY} \neq \frac{XZ}{YZ} \)  
5. \( ADB; BDC \)  
6. \( \triangle ABC \) and \( \triangle ADB \): \( \frac{2}{1} \)  
   \[
   \triangle ABC \quad \text{and} \quad \triangle BDC: \frac{2\sqrt{3}}{3} 
   \]
   \[
   \triangle BDC \quad \text{and} \quad \triangle ADB: \frac{\sqrt{3}}{1} 
   \]
7. \( 6 + 2\sqrt{3} \)  
8. \( 3 + \sqrt{3}; 3 + 3\sqrt{3} \)