Name _____ Date _____ Class _____

LESSON 11-3

Corresponding Parts of Similar Figures

Practice and Problem Solving: A/B

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.

_____

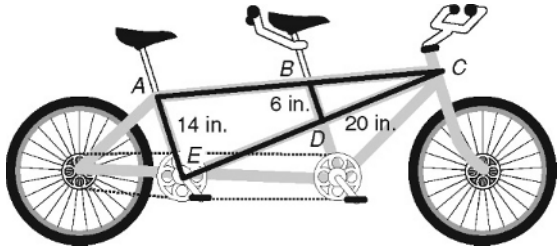
Use the diagram for Problems 4 and 5.

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

_____

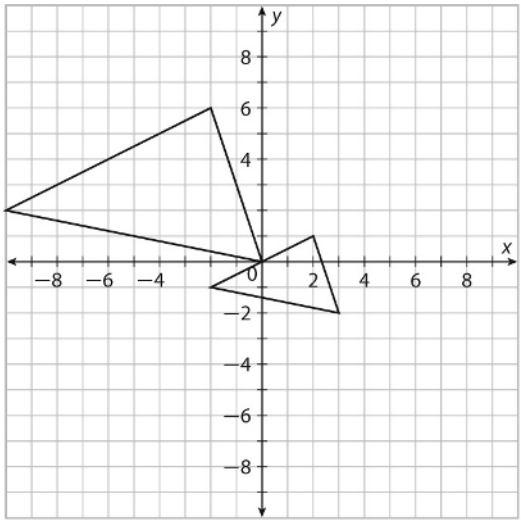
5. Find *CE* to the nearest tenth. Show your work.

_____

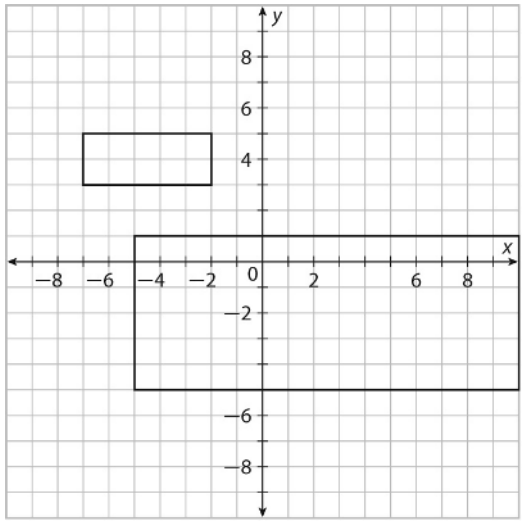


For Problems 6 and 7, show that the figures are similar by using a ruler to find the center of dilation. Name the center point.

6. (____, ____)



7. (____, ____)



4. smaller
5. 80; 20; 2
6. transformations; similar

Reading Strategies

1. Sequence of transformations: reflection and dilation
2. Single dilation

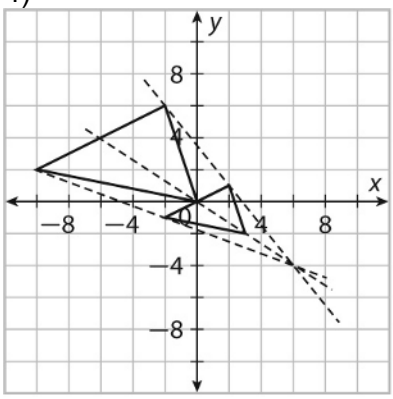
Success for English Learners

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

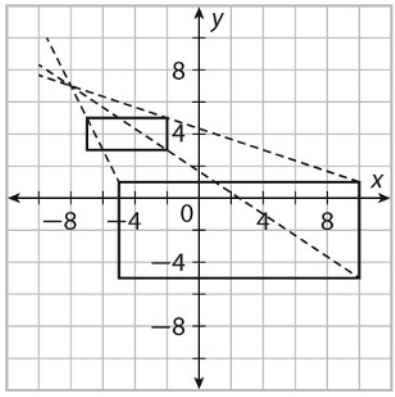
LESSON 11-3

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: $\frac{CD}{FG} = \frac{DE}{GH}$; $\frac{CD}{FG} = \frac{CE}{FH}$; $\frac{DE}{GH} = \frac{CE}{FH}$; $m\angle C = m\angle F$; $m\angle D = m\angle G$; $m\angle E = m\angle H$
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. $\frac{6}{14} = \frac{20}{CE}$; $CE = (20 \times 14) \div 6 \approx 46.7$ in.
6. (6, –4)



7. (–8, 7)



Practice and Problem Solving: C

1. $\frac{CD}{FG} = \frac{DE}{GH}$; $\frac{CD}{FG} = \frac{CE}{FH}$; $\frac{DE}{GH} = \frac{CE}{FH}$; $\frac{CD}{DE} = \frac{FG}{GH}$; $\frac{CD}{CE} = \frac{FG}{FH}$; $\frac{DE}{CE} = \frac{GH}{FH}$; $m\angle C = m\angle F$; $m\angle D = m\angle G$; $m\angle E = m\angle H$
2. Possible answer: $\frac{CD}{FG} = \frac{DE}{GH}$ and $\frac{CD}{DE} = \frac{FG}{GH}$; $w = CD$; $x = FG$; $y = DE$; $z = GH$. Substitute the letters into the first proportion: $\frac{w}{x} = \frac{y}{z}$. Cross multiply: $wz = xy$. Divide both sides by z and by y: $\frac{w}{y} = \frac{x}{z}$. Replace the letters with the side lengths to get the second proportion.
3. 9
4. No. $\frac{WX}{XY} \neq \frac{XZ}{YZ}$
5. ADB; BDC
6. $\triangle ABC$ and $\triangle ADB$: $\frac{2}{1}$

   $\triangle ABC$ and $\triangle BDC$: $\frac{2\sqrt{3}}{3}$

   $\triangle BDC$ and $\triangle ADB$: $\frac{\sqrt{3}}{1}$
7. $6 + 2\sqrt{3}$
8. $3 + \sqrt{3}$; $3 + 3\sqrt{3}$