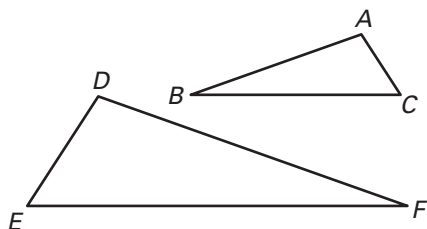


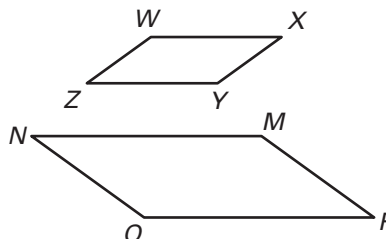
**LESSON 6.3** **Practice B**  
For use with pages 387–395

List all pairs of congruent angles for the figures. Then write the ratios of the corresponding sides in a statement of proportionality.

1.  $\triangle ABC \sim \triangle DFE$



2.  $WXYZ \sim MNOP$



3. **Multiple Choice** Triangles  $ABC$  and  $DEF$  are similar. Which statement is not correct?

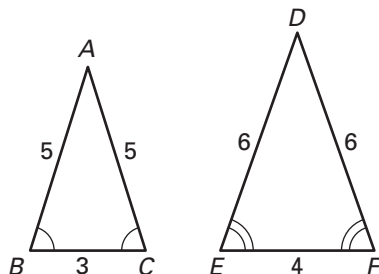
A.  $\frac{AB}{DE} = \frac{BC}{EF}$

B.  $\frac{CA}{FD} = \frac{AB}{DE}$

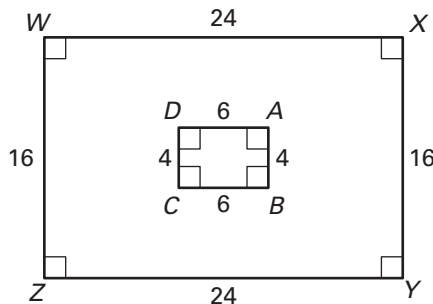
C.  $\angle A \cong \angle F$

Determine whether the polygons are similar. If they are, write a similarity statement and find the scale factor.

4.

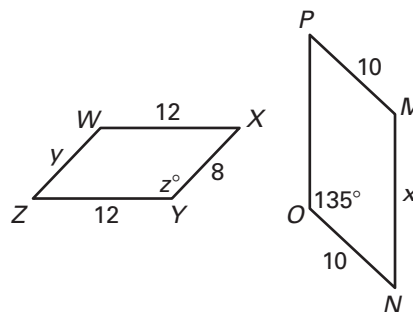


5.



In the diagram,  $WXYZ \sim MNOP$ .

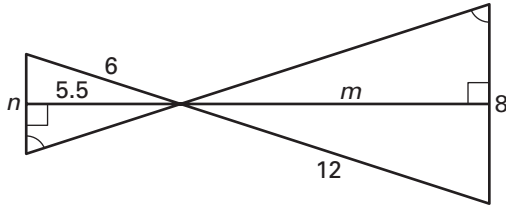
6. Find the scale factor of  $WXYZ$  to  $MNOP$ .
7. Find the values of  $x$ ,  $y$ , and  $z$ .
8. Find the perimeter of  $WXYZ$ .
9. Find the perimeter of  $MNOP$ .
10. Find the ratio of the perimeter of  $MNOP$  to the perimeter of  $WXYZ$ .



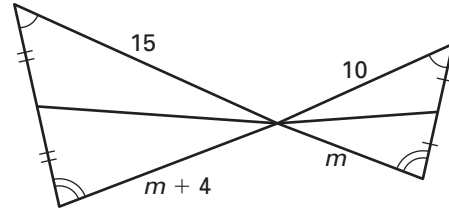
**LESSON**  
**6.3**
**Practice B** *continued*  
 For use with pages 387–395

The two triangles are similar. Find the values of the variables.

11.



12.



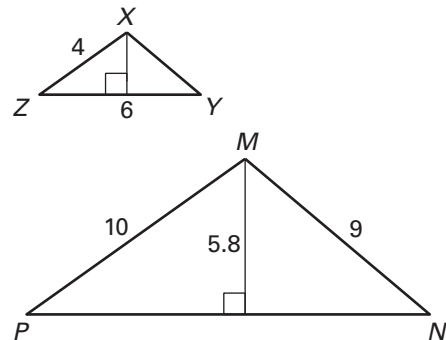
In Exercises 13 and 14, use the following information.

**Similar Triangles** Triangles  $RST$  and  $WXY$  are similar. The side lengths of  $\triangle RST$  are 10 inches, 14 inches, and 20 inches, and the length of an altitude is 6.5 inches. The shortest side of  $\triangle WXY$  is 15 inches long.

13. Find the lengths of the other two sides of  $\triangle WXY$ .
14. Find the length of the corresponding altitude in  $\triangle WXY$ .
15. **Multiple Choice** The ratio of one side of  $\triangle ABC$  to the corresponding side of a similar  $\triangle DEF$  is 4 : 3. The perimeter of  $\triangle DEF$  is 24 inches. What is the perimeter of  $\triangle ABC$ ?
- A. 18 inches                      B. 24 inches                      C. 32 inches

In the diagram,  $\triangle XYZ \sim \triangle MNP$ .

16. Find the scale factor of  $\triangle XYZ$  to  $\triangle MNP$ .
17. Find the unknown side lengths of both triangles.
18. Find the length of the altitude shown in  $\triangle XYZ$ .
19. Find and compare the areas of both triangles.



In Exercises 20–22, use the following information.

**Swimming Pool** The community park has a rectangular swimming pool enclosed by a rectangular fence for sunbathing. The shape of the pool is similar to the shape of the fence. The pool is 30 feet wide. The fence is 50 feet wide and 100 feet long.

20. What is the scale factor of the pool to the fence?
21. What is the length of the pool?
22. Find the area reserved strictly for sunbathing.

### Lesson 6.3, continued

5.  $\triangle ABC \sim \triangle FDE; \frac{1}{2}$  6.  $GHIJ \sim KLMN; \frac{3}{2}$   
 7. not similar 8.  $\triangle ABC \sim \triangle FDE; \frac{1}{1}$  9. 8  
 10. 18 11.  $\frac{3}{4}; P(\triangle LMN) = 45, P(\triangle PQR) = 60$   
 12.  $\frac{3}{5}; P(XYZW) = 100, P(STUV) = 60$   
 13. altitudes;  $x = 24$  14. medians;  $y = 12$   
 15. The shadow is not similar to the kite because the corresponding side ratios are not all the same:  
 $\frac{95}{78} \approx 1.22 \neq 1.08 \approx \frac{142}{132}$

#### Practice Level B

1.  $\angle A \cong \angle D, \angle B \cong \angle F, \angle C \cong \angle E,$   
 $\frac{AB}{DF} = \frac{BC}{FE} = \frac{AC}{DE}$  2.  $\angle W \cong \angle M, \angle X \cong \angle N,$   
 $\angle Y \cong \angle O, \angle Z \cong \angle P, \frac{WX}{MN} = \frac{XY}{NO} = \frac{YZ}{OP} = \frac{WZ}{MP}$   
 3. C 4. no 5. yes;  $BCDA \sim WXYZ; \frac{1}{4}$  or  
 $WXYZ \sim BCDA; 4$   
 6.  $\frac{4}{5}$  7. 15, 8, 135 8. 40 9. 50 10.  $\frac{5}{4}$   
 11.  $m = 11, n = 4$  12.  $m = 8$  13.  $XY = 30$  in.,  
 21 in. 14. 9.75 in. 15. C 16.  $\frac{2}{5}$   
 17.  $XY = 3.6, PN = 15$  18. 2.32  
 19. Area of  $\triangle XYZ = 6.96$ ; Area of  
 $\triangle MNP = 43.5$ ; The area of similar triangles differ  
 by the scale factor squared.  
 20.  $\frac{3}{5}$  21. 60 ft 22. 3200 ft<sup>2</sup>

#### Practice Level C

1.  $\angle S \cong \angle C, \angle T \cong \angle D, \angle U \cong \angle E;$   
 $\frac{ST}{CD} = \frac{TU}{DE} = \frac{SU}{CE}$   
 2.  $\angle L \cong \angle G, \angle M \cong \angle H, \angle N \cong \angle I;$   
 $\frac{LM}{GH} = \frac{MN}{HI} = \frac{LN}{GI}$   
 3.  $\angle C \cong \angle M, \angle D \cong \angle N, \angle E \cong \angle K,$   
 $\angle F \cong \angle L; \frac{CD}{MN} = \frac{DE}{NK} = \frac{EF}{KL} = \frac{CF}{ML}$   
 4.  $\triangle LNM \sim \triangle TPO; \frac{4}{3}$   
 5. quadrilateral  $ABCD \sim$  quadrilateral  $HEFG; \frac{5}{8}$   
 6.  $\frac{2}{3}$  7.  $\frac{3}{2}$  8. 4.5 9. 117° 10. 24 11. 201.6 ft  
 12. 77.4 in. 13.  $\frac{rv}{u}$  14.  $\frac{sv}{u}$  15.  $\frac{tv}{u}$  16. 6

17. -5, 2.5 18. 8 19. -0.4, 15  
 20. 8 times greater

#### Review for Mastery

1.  $\frac{9}{10}$  2. 36 3.  $\frac{5}{4}$  4. 77.5 5. 20

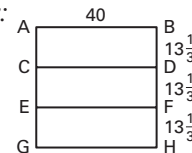
#### Problem Solving Workshop: Mixed Problem Solving

1. a. 58,800 yen b. about 580.56 Canadian  
 dollars 2. a.  $\frac{2}{7}, x = 45.5, y = 17.5$  b. 50, 175  
 c. 60, 735 d. The ratio of the perimeters is equal  
 to the scale factor. The ratio of the areas is equal  
 to the square of the scale factor. 3. 517  
 4. a. 3.12 in. b. 15 5. 3.2 6. Answers will  
 vary. 7. a. 10.6 lb per person b. 42.4 lb; about  
 3.53 lb c. about 11 oranges d. *Sample answer:*  
 No; Some families eat more fruits than others.  
 The oranges could have been used in recipes.

#### Challenge Practice

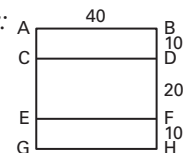
1.  $\frac{7}{4}$  2. 21 cm 3.  $JK = 35$  cm,  $JL = 36.75$  cm,  
 $RS = 20$  cm,  $ST = 13$  cm,  $RT = 21$  cm  
 4. Area of  $\triangle JKL = 385.875$  cm<sup>2</sup>;  
 Area of  $\triangle RST = 126$  cm<sup>2</sup>; 3.06251;  
 The scale factor of the areas is the square of the  
 scale factor of the perimeters.

5. *Sample answer:*



$$ABDC \cong CDFE \cong EFHG$$

6. *Sample answer:*



$$ABDC \sim CDFE; CDFE \sim EFHG, (ABDC \cong EFHG)$$