

LESSON 6.4 Practice
For use with pages 381-387

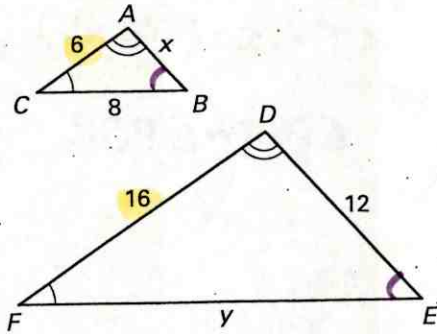
Use the diagram to complete the statement.

1. $\triangle ABC \sim \triangle DEF$ 2. $\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$

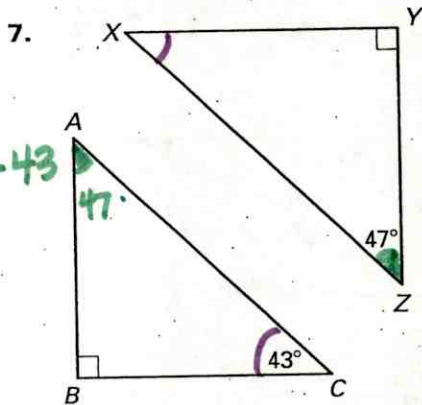
3. $\angle B \cong \angle E$ 4. $\frac{x}{12} = \frac{8}{y}$

5. $x = \frac{9}{2}$ or 4.5 6. $y = \frac{64}{3}$

$\frac{3}{8} = \frac{6}{16} = \frac{x}{12}$ $8x = 36$ $x = 36/8$
 $\frac{3}{8} = \frac{8}{y}$ $3y = 64$ $y = \frac{64}{3}$

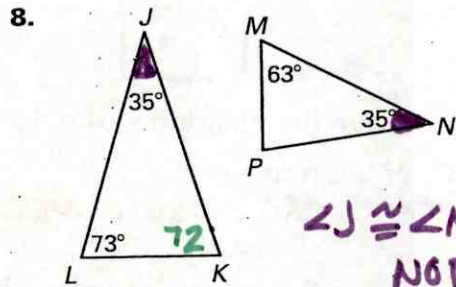


Determine whether the triangles are similar. If they are, write a similarity statement.



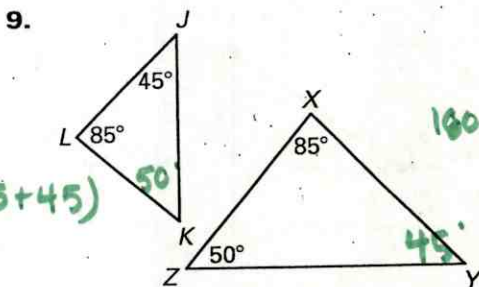
$\angle A = 90 - 43$

$\angle B \cong \angle Y$ $\angle A \cong \angle Z$ $\triangle ABC \sim \triangle ZYX$
AA



$\angle K = 180 - (73 + 35)$

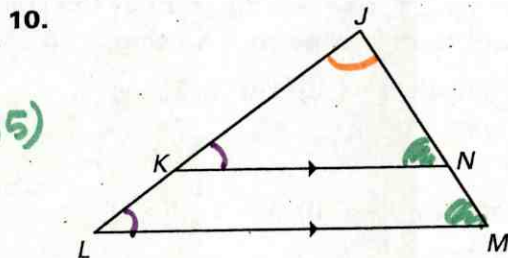
$\angle J \cong \angle N$
NOT SIMILAR



$180 - (85 + 45)$

$180 - (50 + 85)$

$\triangle JKL \sim \triangle YZX$

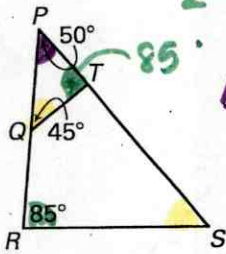


$\angle L \cong \angle K$ CA $\angle N \cong \angle M$ CA $\angle J \cong \angle J$ Reflexive
 $\triangle JKN \sim \triangle JLM$

LESSON 6.4

Practice *continued*
For use with pages 381-387

11.



$\angle T = 180 - (50 + 45)$

$\triangle PQT \sim \triangle PSR$

$\angle P \cong \angle P$
 $\angle T \cong \angle R$

13. Multiple Choice In the diagram at the right, find the length of \overline{BC} .

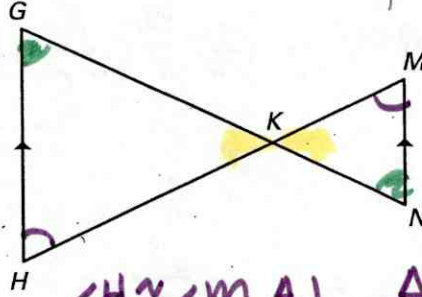
A. $\frac{28}{5}$

B. 6

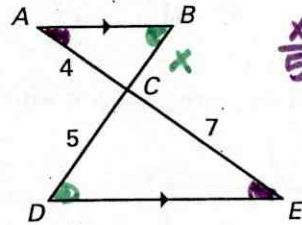
C. 3

D. $\frac{20}{7}$

12.



$\angle H \cong \angle M$ A1
 $\angle G \cong \angle N$ A1
 $\triangle GKH \sim \triangle KNM$



$\frac{x}{5} = \frac{4}{7}$

$7x = 20$

$x = \frac{20}{7}$

In Exercises 14-17, use the diagram at the right.

14. List three pairs of congruent angles.

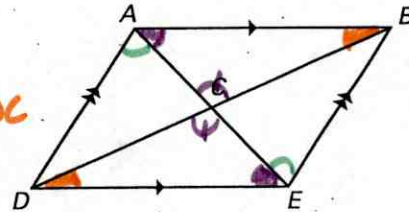
$\angle BAC \cong \angle DEA$ AI
 $\angle DAC \cong \angle BEC$ AI
 $\angle ABC \cong \angle EDC$ AI

15. Name two pairs of similar triangles and write a similarity statement for each.

$\triangle ABC \sim \triangle EDC$ AA
 $\triangle ACD \sim \triangle ECB$ AA

16. Is $\triangle ACD \sim \triangle BCE$? yes, AA

17. Is $\triangle AED \cong \triangle EAB$? yes, AAS
 $\overline{AE} \cong \overline{AE}$ reflexive



In Exercises 18-21, use the diagram at the right.

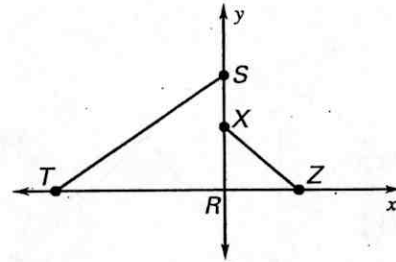
Find the coordinates of point Z so that $\triangle RST \sim \triangle RXZ$.

18. $R(0, 0), S(0, 4), T(-8, 0), X(0, 2), Z(x, y)$

19. $R(0, 0), S(0, 6), T(-6, 0), X(0, 2), Z(x, y)$

20. $R(0, 0), S(0, 10), T(-20, 0), X(0, 6), Z(x, y)$

21. $R(0, 0), S(0, 7), T(-9, 0), X(0, 4), Z(x, y)$



LESSON
6.4

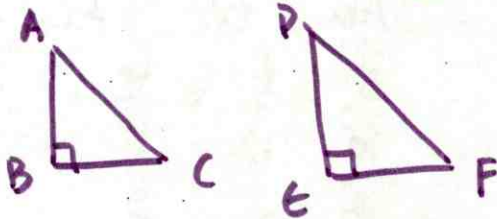
Practice *continued*
For use with pages 381–387

22. **Multiple Choice** Triangles ABC and DEF are right triangles that are similar. AB and BC are the legs of the first triangle. DE and EF are the legs of the second triangle. Which of the following is false?

A. $\angle A \cong \angle D$

B. $AC = DF$

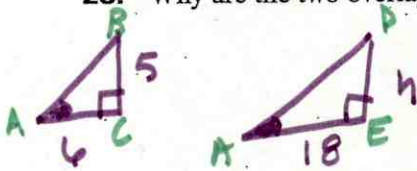
C. $\frac{AC}{DF} = \frac{AB}{DE}$



In Exercises 23–25, use the following information.

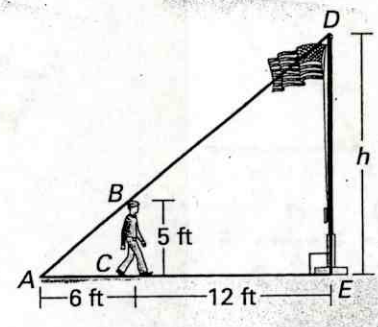
Flag Pole In order to estimate the height h of a flag pole, a 5 foot tall male student stands so that the tip of his shadow coincides with the tip of the flag pole's shadow. This scenario results in two similar triangles as shown in the diagram.

23. Why are the two overlapping triangles similar?



by AA

$\angle A \cong \angle A$ Reflexive
 $\angle BCA \cong \angle DEA$ $\perp \cong$ Thm.



24. Using the similar triangles, write a proportion that models the situation.

$$\frac{5}{6} = \frac{h}{18}$$

25. What is the height h (in feet) of the flag pole?

$$\frac{5}{6} = \frac{h}{18}$$

$$6h = 5(18)$$

$$6h = 90$$

$$\boxed{h = 15} \text{ ft.}$$