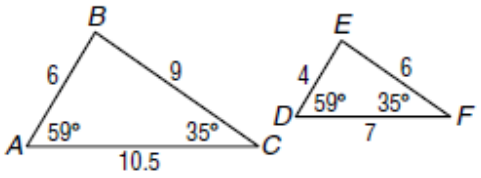
NAME _____ DATE _____ PERIOD _

7-2 Skills Practice

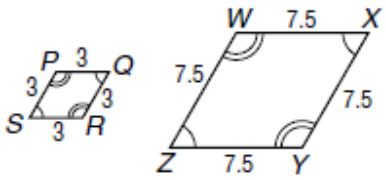
Similar Polygons

Determine whether each pair of figures is similar. Justify your answer.

1.

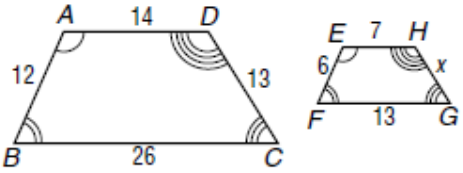


2.

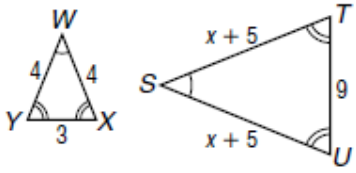


Each pair of polygons is similar. Write a similarity statement, and find x, the measure(s) of the indicated side(s), and the scale factor.

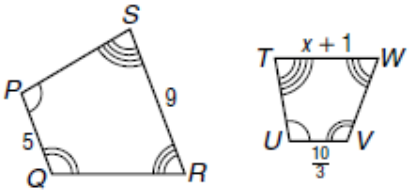
3. $\overline{GH}$



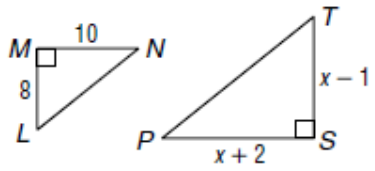
4. $\overline{ST}$ and $\overline{SU}$



5. $\overline{WT}$



6. $\overline{TS}$ and $\overline{SP}$



7. Triangle JKL is similar to $\triangle TUV$ with a scale factor of $\frac{3}{4}$. If the lengths of the sides of $\triangle TUV$ are 4, 6, and 8 centimeters, what are the lengths of the sides of $\triangle JKL$?

8. A triangle has side lengths of 3 meters, 5 meters, and 4 meters. The triangle is enlarged so that the larger triangle is similar to the original and the scale factor is 5. Find the perimeter of the larger triangle.

9. A rectangle with length 60 centimeters and height 40 centimeters is reduced so that the new rectangle is similar to the original and the scale factor is $\frac{1}{4}$. Find the length and width of the new rectangle.

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7-1 Practice

Proportions

1. **NUTRITION** One ounce of cheddar cheese contains 9 grams of fat. Six of the grams of fat are saturated fats. Find the ratio of saturated fats to total fat in an ounce of cheese.

2. **FARMING** The ratio of goats to sheep at a university research farm is 4:7. The number of sheep at the farm is 28. What is the number of goats?

3. **ART** Edward Hopper's oil on canvas painting *Nighthawks* has a length of 60 inches and a width of 30 inches. A print of the original has a length of 2.5 inches. What is the width of the print?

Solve each proportion.

4. $\frac{5}{8} = \frac{x}{12}$

5. $\frac{x}{1.12} = \frac{1}{5}$

6. $\frac{6x}{27} = \frac{4}{3}$

7. $\frac{x+2}{3} = \frac{8}{9}$

8. $\frac{3x-5}{4} = \frac{-5}{7}$

9. $\frac{x-2}{4} = \frac{x+4}{2}$

Find the measures of the sides of each triangle.

10. The ratio of the measures of the sides of a triangle is 3:4:6, and its perimeter is 104 feet.

11. The ratio of the measures of the sides of a triangle is 7:9:12, and its perimeter is 84 inches.

12. The ratio of the measures of the sides of a triangle is 6:7:9, and its perimeter is 77 centimeters.

Find the measures of the angles in each triangle.

13. The ratio of the measures of the angles is 4:5:6.

14. The ratio of the measures of the angles is 5:7:8.

15. **BRIDGES** The span of the Benjamin Franklin suspension bridge in Philadelphia, Pennsylvania, is 1750 feet. A model of the bridge has a span of 42 inches. What is the ratio of the span of the model to the span of the actual Benjamin Franklin Bridge?