

Geometry
Assignment 6.4

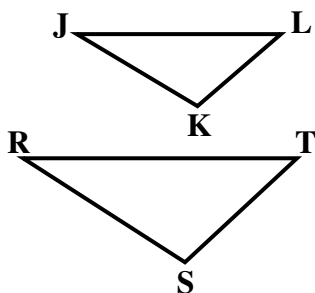
Name: _____

1. Two figures are similar if all the corresponding angles are _____ and the _____ of the corresponding sides are equal.

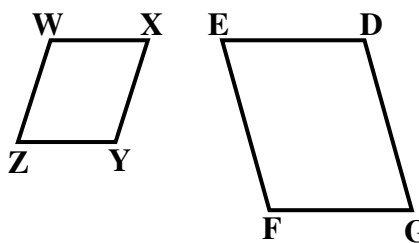
2. A _____ is a number used to determine how much bigger or smaller to figures are to each other.

List all pairs of congruent angles and write the statement of proportionality for the figures.

3. $\triangle JKL \sim \triangle RST$

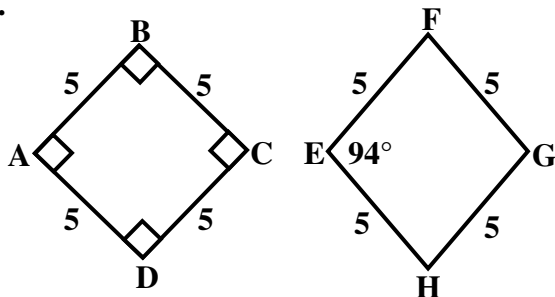


4. $WXYZ \sim DEFG$

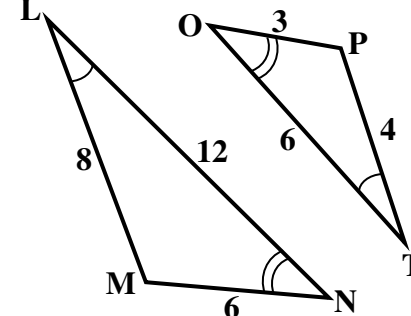


Decide whether the polygons are similar. If so, write a similarity statement.

5.



6.

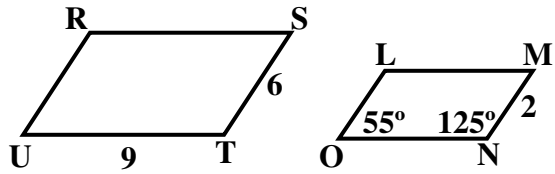


7. A painting is similar to the frame that surrounds it.

Determine the scale factor and set up a proportion using the scale factor to find the length of the painting in inches.



8. In the diagram, $RSTU \sim LMNO$.



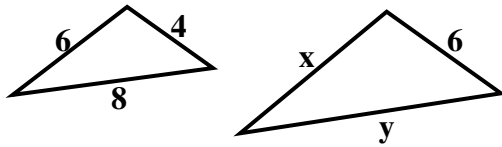
a) Find the scale factor of LMNO to RSTU.

b) Find the length of \overline{NO} .

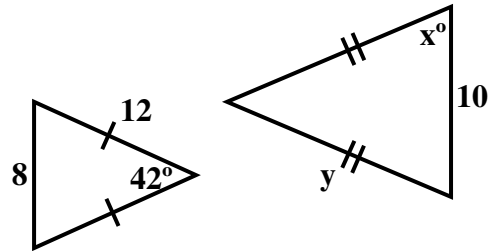
c) Find the measure of $\angle U$.

The two polygons are similar. Find the values of x and y .

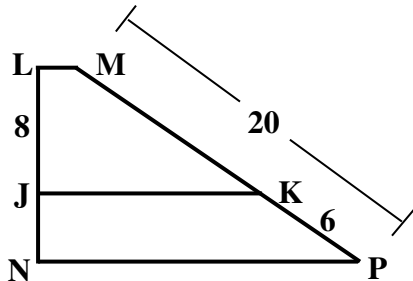
9.



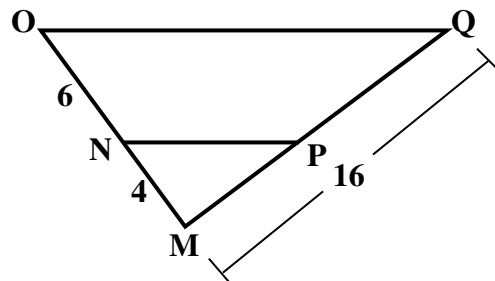
10.



11. Given $\frac{LJ}{JN} = \frac{MK}{KP}$, find JN.



12. Given $\frac{MN}{NO} = \frac{MP}{PQ}$, find PQ.



13. Cindy recently purchased a Honda Accord for \$20,000. On top of that payment she had to pay \$2,000 in taxes. Susan is planning to purchase a Lexus RX for \$40,000. Set up a proportion based on Cindy and Susan's payments to determine how much Susan would have to pay in taxes after purchasing the Lexus.

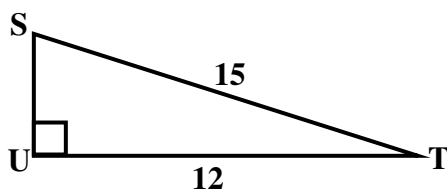
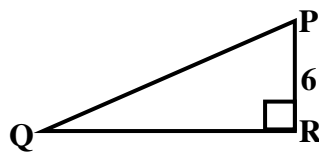
14. The perimeter of a rectangle is 140 feet. The ratio of the width to the length is 1:9. Find the length and the width.

15. The area of a rectangle is 128 cm^2 . The ratio of the width to the length is 1:8. Find the length and the width.

16. The measures of the angles in a triangle are in the extended ratio of 3:6:9. Find the measures of the angles.

17. Two gears, Gear A and Gear B, have a gear ratio of 2:3. If Gear A has 12 teeth, then how many teeth does Gear B have?

18. The ratios of the side lengths of $\triangle PQR$ to the corresponding side lengths of $\triangle STU$ are 2:3. Find the unknown side lengths.

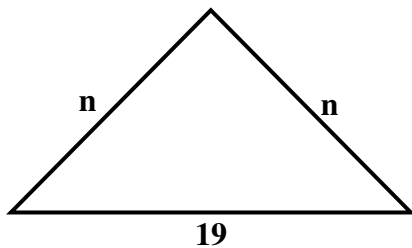


- 19.** Determine if a triangle can be constructed with the given side lengths.

6 in., 7 in., 8 in.

- 20.** A triangle has one side of 6 centimeters and another of 16 centimeters. Describe the possible lengths of the third side.

- 21.** In the figure below, n is a whole number. What is the smallest possible value for n ?



- 22.** Two sides of a triangle measure 17 and 9. Which of the following cannot be the perimeter of the triangle.

- A** 35
- B** 51
- C** 27
- D** 40

Answer Key:

1) congruent, ratios **2)** scale factor **3)** $\angle J \cong \angle R, \angle K \cong \angle S, \angle L \cong \angle T, \frac{JK}{RS} = \frac{KL}{ST} = \frac{JL}{RT}$

4) $\angle W \cong \angle D, \angle X \cong \angle E, \angle Y \cong \angle F, \angle Z \cong \angle G, \frac{WX}{DE} = \frac{XY}{EF} = \frac{YZ}{FG} = \frac{WZ}{DG}$

5) No, not all corresponding angles are congruent **6)** Yes, $\triangle LMN \sim \triangle TPO$ **7)** $\ell_p = 16$ in.

8) a) $\frac{1}{3}$ **b)** 3 **c)** 55° **9)** $x = 9, y = 12$ **10)** $x = 69, y = 15$ **11)** $JN = 3\frac{3}{7}$ **12)** $PQ = 9\frac{3}{5}$

13) \$4,000 **14)** $w = 7$ ft, $\ell = 63$ ft **15)** $w = 4$ cm, $\ell = 32$ cm **16)** $30^\circ, 60^\circ, 90^\circ$ **17)** 18 teeth
18) $SU = 9, QR = 8, PQ = 10$ **19)** Yes **20)** $10 < x < 22$ **21)** 10 **22)** C