

Geometry CC - Unit 7
Lesson 2: Scale Drawings
M2.L1

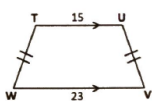
Homework:
HW Handout 7-2

HW 7-1 Answers

In the following problems, use the diagram below where TUVW ~ ABCD.

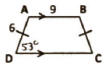
1. List all pairs of congruent angles and write the statement of proportionality for the polygons.

$\angle T \cong \angle A$ $\frac{TU}{AB} = \frac{UV}{BC} = \frac{VW}{CD} = \frac{WT}{DA}$
 $\angle U \cong \angle B$
 $\angle V \cong \angle C$
 $\angle W \cong \angle D$



2. Find the scale factor of TUVW to ABCD.

5:3



3. Find the length of TW.

$\frac{5}{3} = \frac{x}{6}$ $3x = 30$
 $x = 10$ **TW = 10**

4. Find the measure of $\angle TUV$.

$m\angle TUV = 127^\circ$

Dec 20-10:00 PM

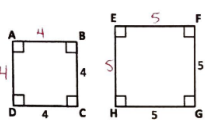
Given the following similarity statement, list all of the angle congruencies and write the statement of proportionality for the polygons.

5. $\triangle DEF \sim \triangle PQR$

$\angle D \cong \angle P$ $\frac{DE}{PQ} = \frac{EF}{QR} = \frac{FD}{RP}$
 $\angle E \cong \angle Q$
 $\angle F \cong \angle R$

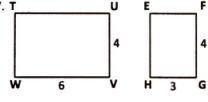
Determine whether each pair of polygons is similar. If so, write the similarity statement and the scale factor. If not, explain your reasoning.

6.



$ABCD \sim EFGH$
 (many different similarity statements because the squares can be rotated)

7.

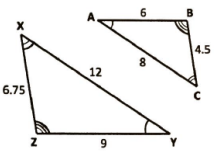


Not similar
 Not enough information

Dec 20-10:04 PM

Determine whether each pair of polygons is similar. If so, write the similarity statement and the scale factor. If not, explain your reasoning.

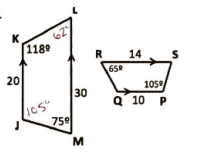
8.



$\triangle ABC \sim \triangle YZX$
 Scale Factor: 2:3

$\frac{8}{12} = \frac{2}{3}$
 $\frac{4.5}{6.75} = \frac{2}{3}$
 $\frac{6}{9} = \frac{2}{3}$

9.



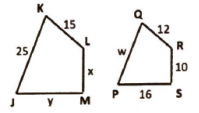
Not Similar
 Angles aren't congruent

Dec 20-10:04 PM

In the following problems, use the diagram below where PQRS ~ JKLM.

10. Find the scale factor of PQRS to JKLM.

$\frac{12}{15} = \frac{4}{5}$ **$\frac{4}{5}$**



11. Find the scale factor of JKLM to PQRS.

$\frac{5}{4}$

12. Find the values of w, x, and y.

$\frac{4}{5} = \frac{10}{x}$ $\frac{4}{5} = \frac{16}{y}$ $\frac{4}{5} = \frac{w}{25}$
 $4x = 50$ $4y = 80$ $5w = 100$
 $x = 12\frac{1}{2}$ **$y = 20$** **$w = 20$**

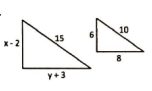
13. Find the ratio of the perimeter of PQRS to the perimeter of JKLM.

PQRS: $12 + 10 + 16 + 20 = 58$ JKLM: $15 + 12\frac{1}{2} + 20 + 25 = 72\frac{1}{2}$
 $4:5$

Dec 20-10:05 PM

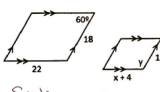
Assume the two polygons are similar. Find the values of x and y.

14. Scale Factor: $\frac{2}{3}$



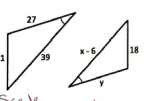
$\frac{2}{3} = \frac{8}{y+3}$ $\frac{2}{3} = \frac{6}{8}$
 $2y+6 = 24$ $2x-4 = 18$
 $2y = 18$ $2x = 22$
 $y = 9$ **$x = 11$**

15. Scale Factor: $\frac{2}{3}$



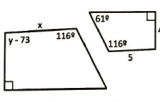
$\frac{2}{3} = \frac{x+4}{12}$ $\frac{2}{3} = \frac{y}{12}$
 $3x+12 = 4y$ $3x = 32$
 $x = \frac{32}{3}$ **$y = 120^\circ$**

16. Scale Factor: $\frac{6}{7}$



$\frac{6}{7} = \frac{y}{18}$ $\frac{6}{7} = \frac{x-6}{18}$
 $7y = 102$ $7x-42 = 234$
 $y = \frac{102}{7}$ **$x = \frac{276}{7}$**

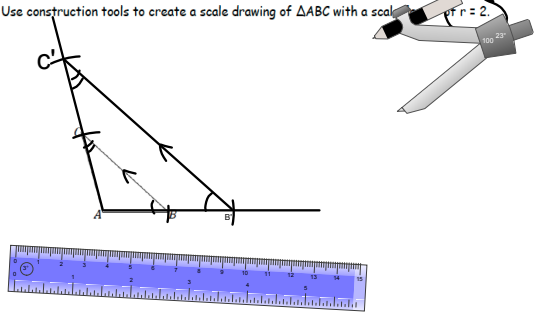
17. Scale Factor: $\frac{2}{3}$



$\frac{2}{3} = \frac{5}{x}$ $\frac{2}{3} = \frac{y-73}{4}$
 $2x = 15$ $y = 93-73$
 $x = 7\frac{1}{2}$ **$y = 20$**

Dec 20-10:05 PM

1) Use construction tools to create a scale drawing of $\triangle ABC$ with a scale factor of 2.



2) What are the properties of a well-scaled drawing of a figure?

Corresponding \angle s are \cong
 Corresponding sides are in proportion

Dec 20-10:01 PM

3) a) Use construction tools to create a scale drawing of $\triangle DEF$ with a scale factor of $r = 3$.
 b) What properties does your scale drawing share with the original figure?
 Explain how you know.

dis is the center of dilation
 Corresponding angles are \cong
 Corresponding sides are in prop.

Dec 20-10:01 PM

4) Use construction tools to create a scale drawing of $\triangle XYZ$ with a scale factor of $r = \frac{1}{2}$.

Y is the center of dilation

Dec 20-10:01 PM

5) a) Use construction tools to create a scale drawing of $\triangle PQR$ with a scale factor of $r = \frac{1}{4}$.
 b) What properties do the scale drawing and the original figure share?
 Explain how you know.

Q is the center of dilation.
 Corresponding angles are \cong
 corresponding sides are in proportion

Dec 20-10:01 PM