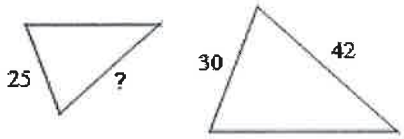
Name: Key Date: _____ Period: _____

Stretching and Shrinking Unit Test Practice

7.G.1: Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing.

Each pair of polygons are similar. Find the missing side length. EXPLAIN AND SHOW YOUR WORK.

1.



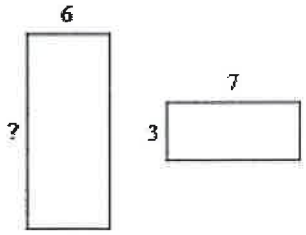
30 corresponds to 25 and we're shrinking, so SF = $25 \div 30 = \frac{5}{6}$

42 corresponds to ?, so

? = $42 \cdot \frac{5}{6} = 35$

scale factor $\frac{5}{6}$ missing side 35 units

2.



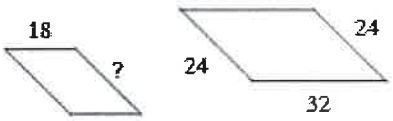
3 corresponds to 6 and we're stretching, so SF = $6 \div 3 = 2$

7 corresponds to ?, so

? = $7 \cdot 2 = 14$

scale factor 2 missing side 14 units

3.



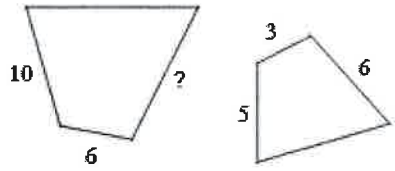
24 corresponds to 18 and we're shrinking, so SF = $18 \div 24 = 0.75$

32 corresponds to ?, so

? = $32 \cdot 0.75 = 24$

scale factor 0.75 missing side 24 units

4.



3 corresponds to 6 and we're stretching, so SF = $6 \div 3 = 2$

6 corresponds to ?, so

? = $6 \cdot 2 = 12$

scale factor 2 missing side 12 units

5. **A figure has a perimeter of 22 meters and an area of 56 meters^2. A larger similar figure is created using a scale factor of 3.75.**
   a. What is the perimeter of the larger figure? Show your work.

   $P = 22 \cdot 3.75 =$ 82.5 m

   b. What is the area of the larger figure? Show your work.

   $A = 56 \cdot 3.75^2 =$ 787.5 m^2

6. **A figure has a perimeter of 13 feet and an area of 48 feet^2. A smaller similar figure is created using a scale factor of 0.6.**
   a. What is the perimeter of the smaller figure? Show your work.

   $P = 13 \cdot 0.6 =$ 7.8 ft

   b. What is the area of the smaller figure? Show your work.

   $A = 48 \cdot 0.6^2 =$ 17.28 ft^2

Name: key Date: _____ Period: _____

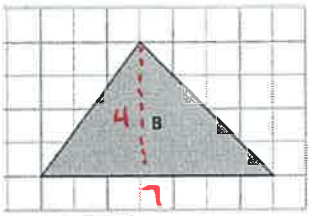
***Stretching and Shrinking* Unit Test Practice**

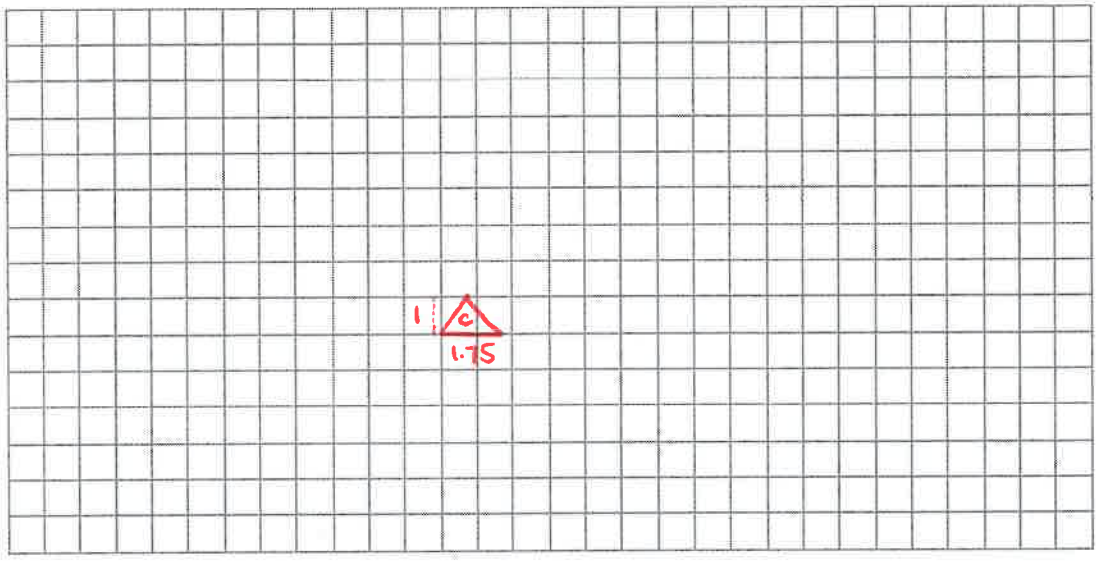
7.G.1: Reproduce a scale drawing at a different scale.

1. Triangle B is sketched below. Triangle C is similar to Triangle B. The scale factor from B to C is 0.25. Draw and label Triangle C on the grid below.

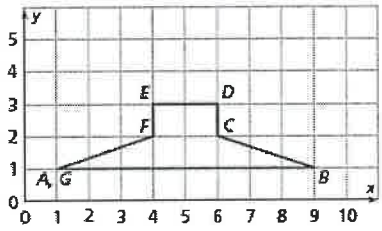
$4 \cdot 0.25 = 1$

$7 \cdot 0.25 = 1.75$

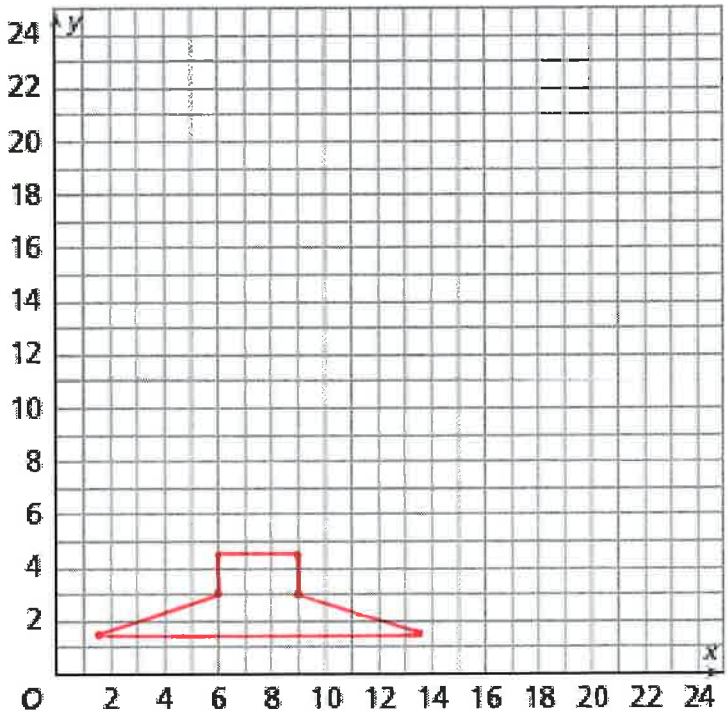




2. Mug's Hat and its coordinates are below. Apply a scale factor of (*1.5x, 1.5y*) to the original coordinates. Then, plot the coordinates of the similar figure on the grid at right.



	Mug's Hat	
Point	(x, y)	
A	(1, 1)	(1.5, 1.5)
B	(9, 1)	(13.5, 1.5)
C	(6, 2)	(9, 3)
D	(6, 3)	(9, 4.5)
E	(4, 3)	(6, 4.5)
F	(4, 2)	(6, 3)
G	(1, 1)	(1.5, 1.5)



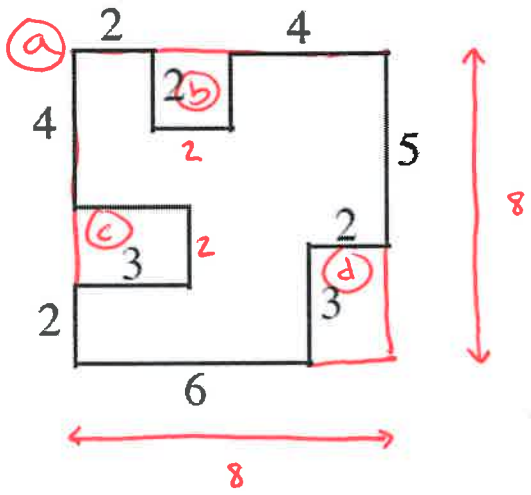
Name: Key Date: _____ Period: _____

***Stretching and Shrinking* Unit Test Practice**

7.G.6: Solve real-world and mathematical problems involving area of two-dimensional objects composed of triangles, quadrilaterals, and other polygons.

Find the area of the figures below by using the formulas for rectangles and triangles. Show all work.

1.

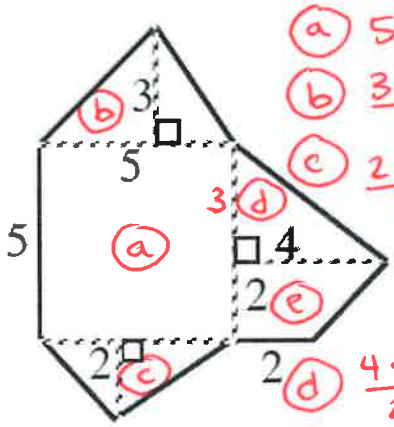


a $8 \cdot 8 = 64$ b $2 \cdot 2 = 4$

c $3 \cdot 2 = 6$ d $2 \cdot 3 = 6$

$A = 64 - 4 - 6 - 6 =$ **48 units²**

2.



a $5 \cdot 5 = 25$

b $\frac{3 \cdot 5}{2} = 7.5$

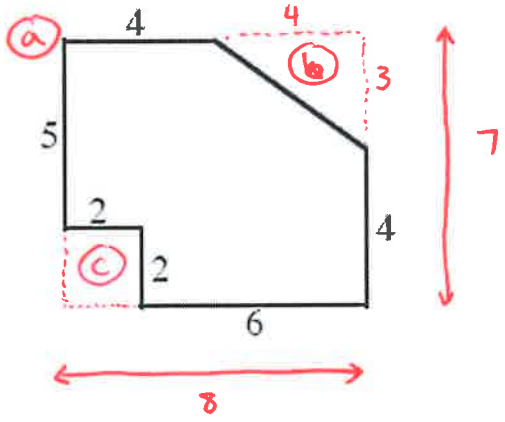
c $\frac{2 \cdot 5}{2} = 5$

d $\frac{4 \cdot 3}{2} = 6$

e $\frac{2(2+4)}{2} = 6$

$A = 25 + 7.5 + 5 + 6 + 6 =$ **49.5 units²**

3.



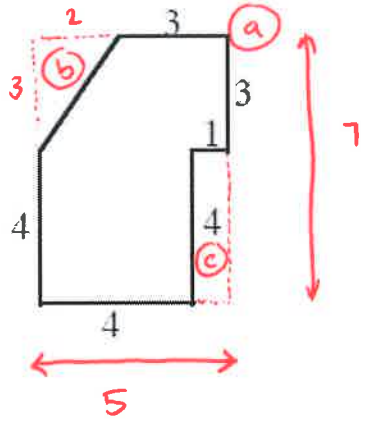
a $7 \cdot 8 = 56$

b $\frac{4 \cdot 3}{2} = 6$

c $2 \cdot 2 = 4$

$A = 56 - 6 - 4 =$ **46 units²**

4.



a $7 \cdot 5 = 35$

b $\frac{2 \cdot 3}{2} = 3$

c $4 \cdot 1 = 4$

$A = 35 - 3 - 4 =$ **28 units²**