Geometry CP
6.7 Dilations Worksheet

$0 < k < 1$ Name Key > 1

State whether a dilation with the given scale factor is a reduction or an enlargement. (E)

1. k = 3 >1 (E)

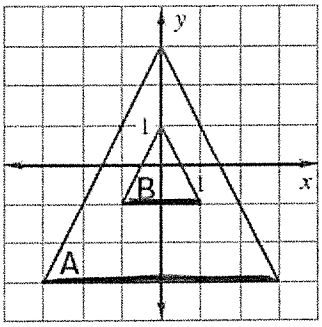
2. $k = \frac{1}{3}$ (R) $0 < \frac{1}{3} < 1$

3. $k = \frac{5}{4}$ (E) $\frac{5}{4} > 1$

4. k = 0.93 (R) $0 < 0.93 < 1$

Determine whether the dilation from Figure A to Figure B is a *reduction* or an *enlargement*. Then find its scale factor.

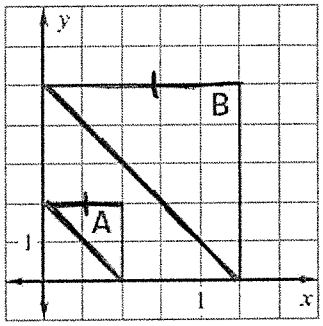
5.



Scale factor = $\frac{\text{Image}}{\text{Pre-Image}}$

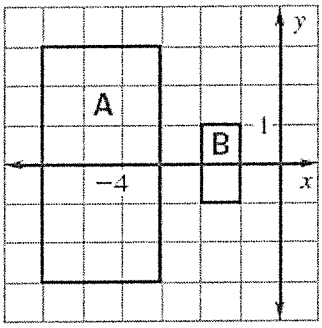
Reduced k = $\frac{2}{6} = \frac{1}{3}$

6.



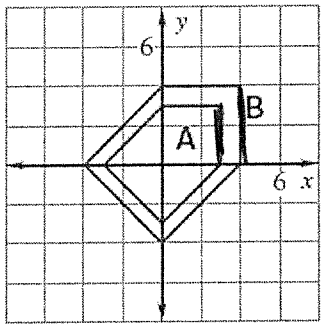
Enlarged k = $\frac{5}{2}$

7.



Reduced k = $\frac{1}{3}$

8.



Enlarged k = $\frac{2}{1.5} = 1.\overline{3}$

Point A is a vertex of a polygon. Point R is the image of A after the dilation. Find the scale factor of the dilation.

9. A (3, 4) and R (9, 12) Scale factor = 3

10. A (9, 12) and R (6, 8) $S = \frac{\text{Image}}{\text{Pre-Image}} = \frac{6}{9} = \frac{2}{3}$

11. A (-2, -3) and R (-10, -15) $S = 5$

A line segment has the given endpoints. Use the scale factor to write the ordered pairs after the dilation.

12. A(1,1), B (3, 1), and k = 2 A'(2,2), B'(6,2)

13. A(4,4), B(8, 12), and k = ¾ A'(3,3) B'(6,9)

14. A(0, 0), B(-3, 2), and k = 5 A'(0,0) B'(-15, 10)

Dilations Practice
Name Key

1- With the points (-4, -2) (1, -3) (2, -5) (-1, 7).

a- Write the rule if the **scale factor** of dilation is 3

$(x, y) \rightarrow (3x, 3y)$

b- What are the new points

(-12, -6) (3, -9) (6, -15) (-3, 21)

c- Enlarged or Shrunk

2- With the points (8, 4) (-6, -6) (-10, 12) (2, -4).

a- Write the rule if the **scale factor** of dilation is 1/2

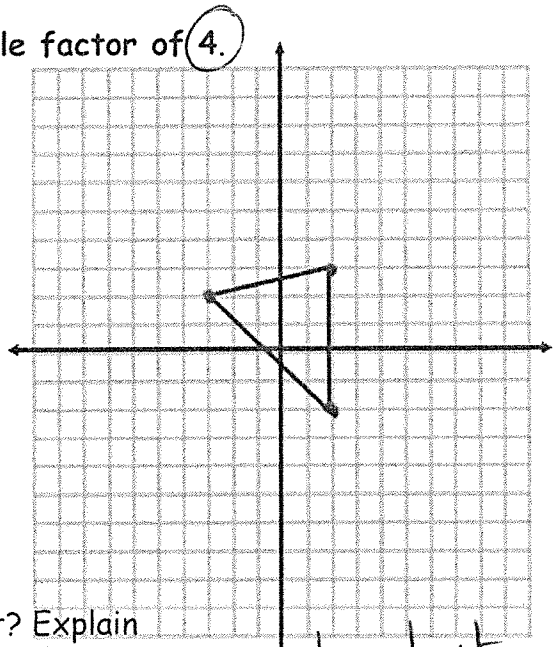
$(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

b- What are the new points

(4, 2) (-3, -3) (-5, 6) (1, -2)

c- Enlarged or Shrunk

3- (2, 3), (-3, 2), and (2, -2) is going to be enlarged by **a scale factor of** 4.



a- What are **the new coordinates** of the triangle?

(8, 12) (-12, 8) (8, -8)

b- Graph the new triangle.

C- Are the two pictures on the graph similar or congruent? Explain

Similar because they have the same angles but the size of the sides is different (enlarged by 4)