

Dilations

Name Key

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

1. $k = 3$

Enlargement

2. $k = \frac{1}{3}$

Reduction

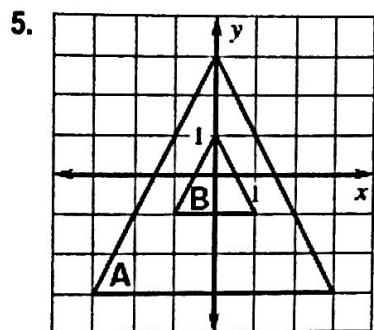
3. $k = \frac{5}{4}$

Enlargement

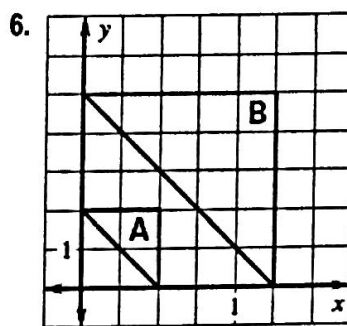
4. $k = 0.93$

Reduction

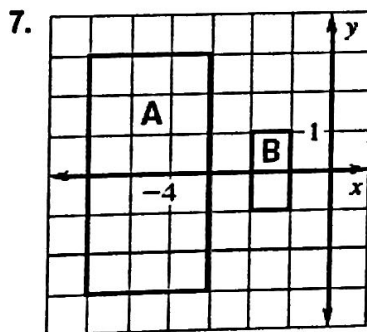
Determine whether the dilation from Figure A to Figure B is a reduction or an enlargement. Then find its scale factor.



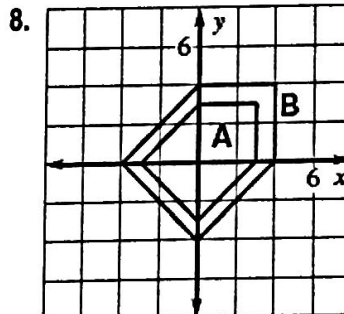
Reduction $k = \frac{1}{2}$



Enlargement $k = 5$



Reduction $k = \frac{1}{4}$



Enlargement $k = 2$

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)

$x = \frac{9}{3} = 3$
 $y = \frac{12}{4} = 3$

10. A (9, 12) and R (6, 8)

$x = \frac{6}{9} = \frac{2}{3}$
 $y = \frac{8}{12} = \frac{2}{3}$

11. A (-2, -3) and R (-10, -15)

$x = \frac{-10}{-2} = 5$
 $y = \frac{-15}{-3} = 5$

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 $k = \frac{3}{4}$

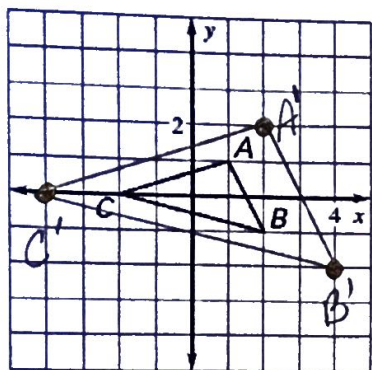
A' (3, 3) B' (6, 9)

14. A (0, 0), B (-3, 2), and $k = 5$

A' (0, 0) B' (-15, 10)

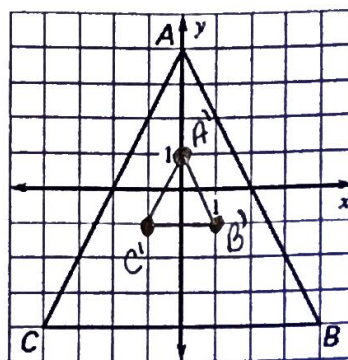
Draw a dilation of the figure using the given scale factor.

15. $k = 2$



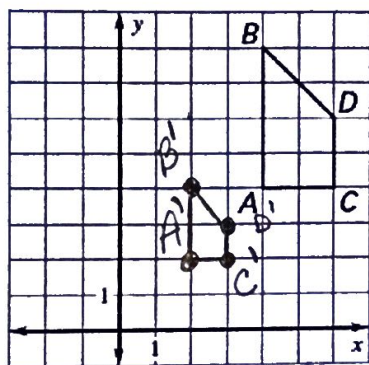
$A(1,1) A'(2,2)$
 $B(2,-1) B'(4,-2)$
 $C(-2,0) C'(-4,0)$

16. $k = \frac{1}{4}$



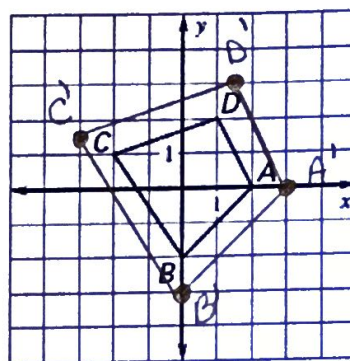
$A(0,4) A'(0,1)$
 $B(4,-4) B'(1,-1)$
 $C(-4,-4) C'(-1,-1)$

17. $k = \frac{1}{2}$



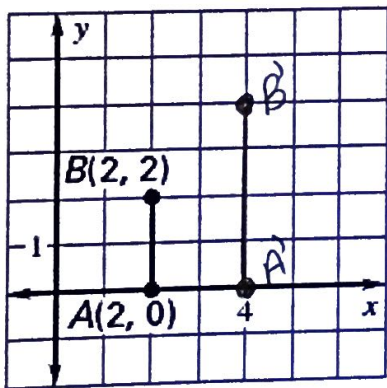
$A(4,4) A'(2,2)$
 $B(4,8) B'(2,4)$
 $C(6,4) C'(3,2)$
 $D(6,6) D'(3,3)$

18. $k = 1\frac{1}{2}$



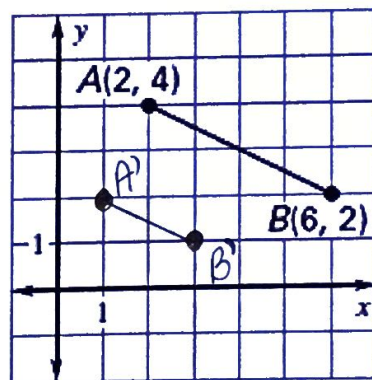
$A(2,0) A'(3,0)$
 $B(0,-2) B'(0,-3)$
 $C(-2,1) C'(-3, 1\frac{1}{2})$
 $D(1,2) D'(1\frac{1}{2}, 3)$

19. $k = 2$



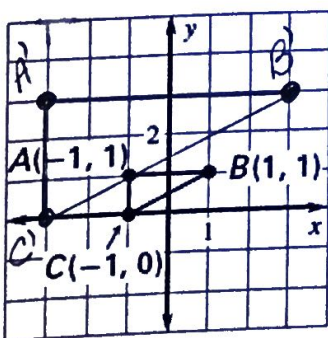
$A(2,0) A'(4,0)$
 $B(2,2) B'(4,4)$

20. $k = \frac{1}{2}$



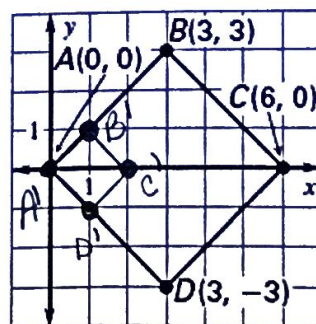
$A(2,4) A'(1,2)$
 $B(6,2) B'(3,1)$

21. $k = 3$



$A(-1,1) A'(-3,3)$
 $B(1,1) B'(3,3)$
 $C(-1,0) C'(-3,0)$

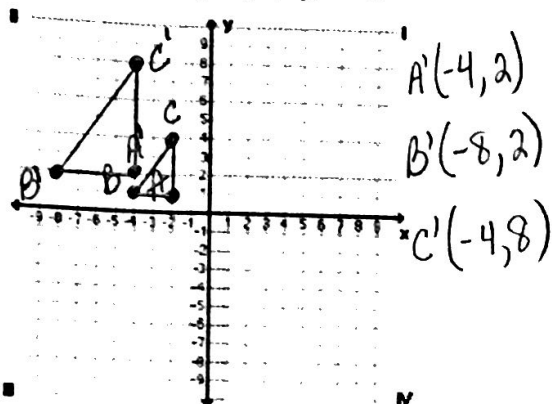
22. $k = \frac{1}{3}$



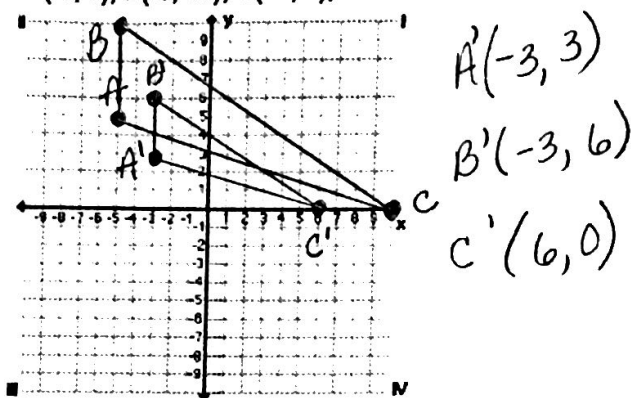
$A(0,0) A'(0,0)$
 $B(3,3) B'(1,1)$
 $C(6,0) C'(2,0)$
 $D(3,-3) D'(1,-1)$

Draw a dilation of the polygon with the given vertices using the given scale factor. Plot the ordered pairs on the coordinate plane AND the dilation.

23. $A(-2, 1)$, $B(-4, 1)$, $C(-2, 4)$; $k = 2$

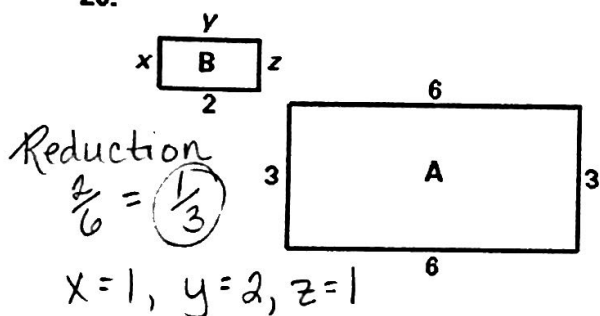


24. $A(-5, 5)$, $B(-5, 10)$, $C(10, 0)$; $k = 3/5$

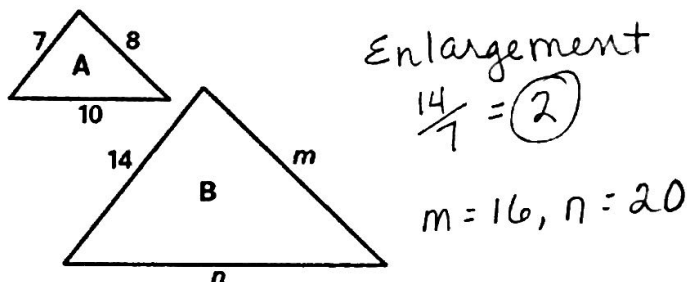


Determine whether the dilation from Figure A to Figure B is a reduction or an enlargement. Then, find the values of the variables.

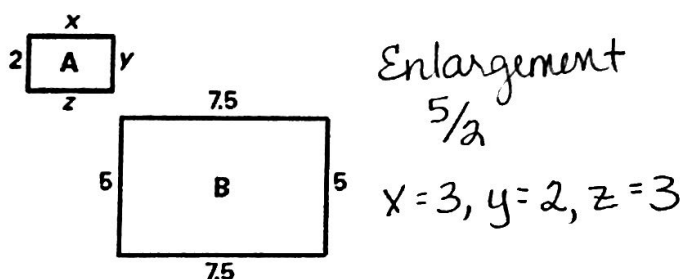
25.



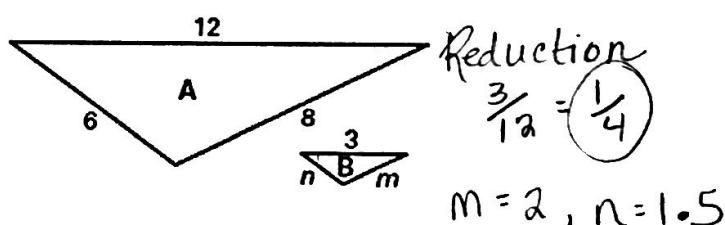
26.



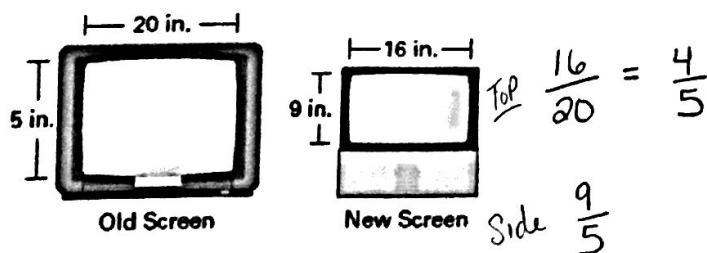
27.



28.



29. The screen on your old television is 20 inches wide and 15 inches high. The screen on your new widescreen television is 16 inches wide and 9 inches high. Is the screen on your new TV a dilation of the screen on your old TV? Explain.



No, because corresponding side lengths are not proportional.