

# Dilations Homework

Name Key

Look at the coordinates below and give the magnitude of the dilation.

- |                              |  |
|------------------------------|--|
| 1. U (2, 1) to U' (6, 3)     | magnitude: <u>3</u>                        |
| 2. V (0, 4) to V' (0, 20)    | magnitude: <u>5</u>                        |
| 3. W (5, -7) to W' (25, -35) | magnitude: <u>5</u>                        |
| 4. X (4, 12) to X' (1, 3)    | magnitude: <u><math>\frac{1}{4}</math></u> |
| 5. Y (2, 6) to Y' (0.5, 1.5) | magnitude: <u><math>\frac{1}{4}</math></u> |
| 6. Z (4, -2) to Z' (24, -12) | magnitude: <u>6</u>                        |

Give the new coordinate for each of the following after a dilation of magnitude 4.

7. M (-7, 1) (-28, 4)      8. N (-4, -8) (-16, -32)

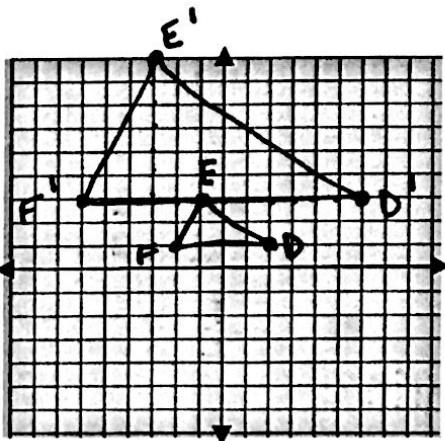
Give the new coordinate for each of the following after a dilation of magnitude  $\frac{1}{3}$ .

9. P (9, 21) (3, 7)      10. Q (6, -3) (2, -1)

11. A dilation of magnitude 7 is an example of a stretch/expansion  
 12. A dilation of magnitude  $\frac{2}{5}$  is an example of a shrink/compression

Draw and label the Pre-Image of the figure. List the coordinates under the given magnitude. Draw the image under the given magnitude. Complete the statements.

13.



$\triangle DEF (x, y)$

$\triangle D'E'F' (3x, 3y)$

D (2, 1)

D: (6, 3)

E (-1, 3)

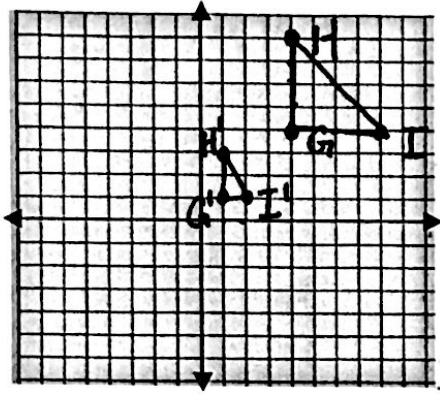
E: (-3, 9)

F (-2, 1)

F: (-6, 3)

This is a size change of magnitude 3. This is an example of a/an stretch. The area of the original figure is 4. The area of the dilation is 36. The dilation is 9x as big.

14.



$\Delta GHI (x, y)$

$\Delta G'H'I' (1/4x, 1/4y)$

G (4,4)

G' (1, 1)

H (4, 8)

H' (1, 2)

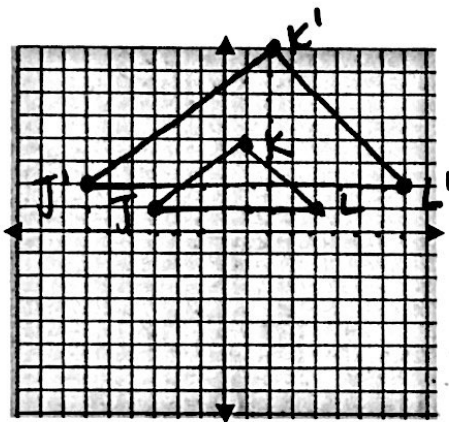
I (8, 4)

I' (2, 1)

This is a size change of magnitude  $\frac{1}{4}$ . This is an example of a/an shrink. The area of the original figure is 8. The area of the dilation is 1. The dilation is  $\frac{1}{8}$  as big.

?

15.



$\Delta JKL (x, y)$

$\Delta J'K'L' (2x, 2y)$

J (-3, 1)

J' (-6, 2)

K (1, 4)

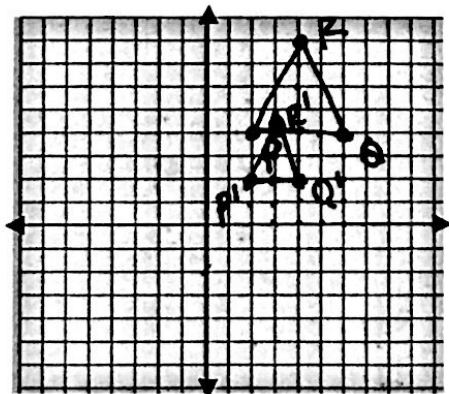
K' (2, 8)

L (4, 1)

L' (8, 2)

This is a size change of magnitude 2. This is an example of a/an stretch. The area of the original figure is 10.5. The area of the dilation is 42. The dilation is 4<sup>x</sup> as big.

16.



$\Delta PQR (x, y)$

$\Delta P'Q'R' (1/2x, 1/2y)$

P (2, 4)

P' (1, 2)

Q (6, 4)

Q' (3, 2)

R (4, 8)

R' (2, 4)

This is a size change of magnitude  $\frac{1}{2}$ . This is an example of a/an shrink. The area of the original figure is 8. The area of the dilation is 2. The dilation is  $\frac{1}{4}$  as big.