

What is the rate of change of the function with a graph passing through the points $(-1, 7)$ and $(3, 19)$?

☐ $\frac{1}{13}$

☐ $\frac{1}{3}$

☒ 3

☐ 13

$$\frac{19-7}{3-(-1)} = \frac{12}{4}$$

Fernando has a water tank that holds 160 gallons. There are 40 gallons of water in the tank. Fernando opens a tap to fill the tank, and the tap fills 7 gallons of water into the tank every 10 minutes.

Which function shows the relationship between the total amount of water, A , in the tank t minutes after the tap is opened and until the tank is *completely* filled?

☐ $A = 40t + \frac{7}{10}$

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Reflection "Flip"

Definition: A transformation of a figure that flips the figure across a line to create a mirror image.

Reflect Across the x axis

Rule- Change the y value to its opposite

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

A	(0,3)	A¹	(0,-3)
B	(3,6)	B¹	(3,-6)
C	(6,3)	C¹	(6,-3)
D	(3,0)	D¹	(3,0)

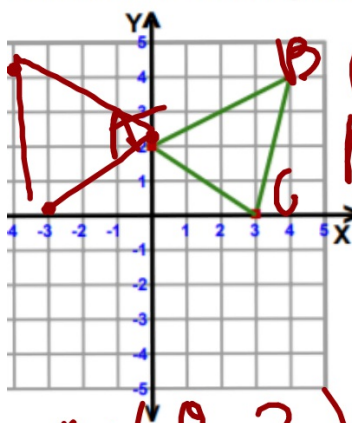
Reflect Across the y axis

Rule- Change the x value to its opposite

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

A	(0,3)	A¹	(0,3)
B	(3,6)	B¹	(-3,6)
C	(6,3)	C¹	(-6,3)
D	(3,0)	D¹	(-3,0)

ection: Across the y-axis

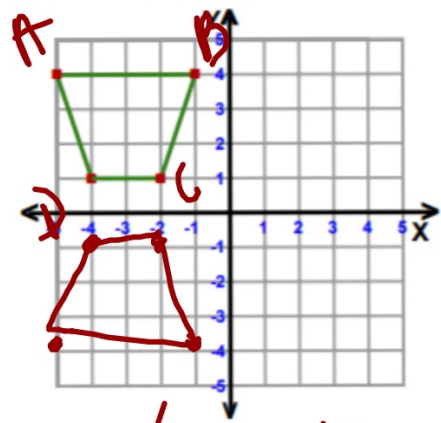


$A: (0, 2)$
 $B: (-4, 4)$
 $C: (-3, 0)$

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 $B: (4, 4)$
 $C: (3, 0)$

$A: (-5, 4)$
 $B: (-1, 4)$
 $C: (-4, 1)$
 $D: (-4, 1)$

2) Reflection: Across the x-axis



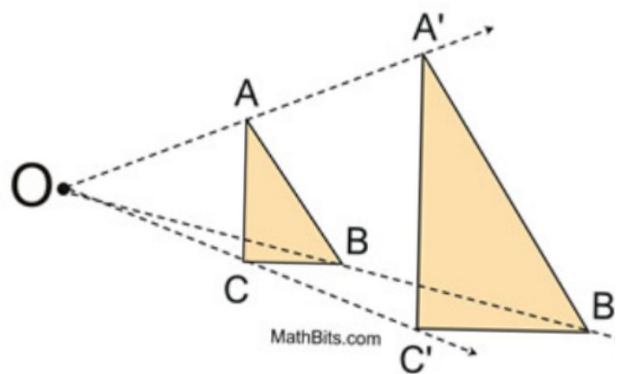
$A: (-5, -4)$
 $B: (-1, -4)$
 $C: (-2, -1)$
 $D: (-4, -1)$

Dilation is a transformation that produces an image that is the **same shape** as the original, but is a **different size**.

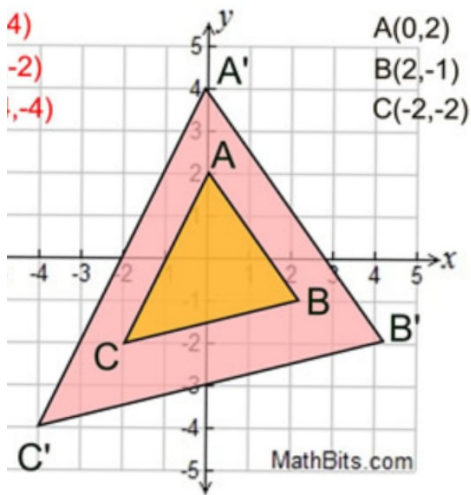
Dilation that creates a larger image is called an **enlargement**.

Dilation that creates a smaller image is called a **reduction**.

Dilation *stretches* or *shrinks* the original figure.



dilation scale factor 2:



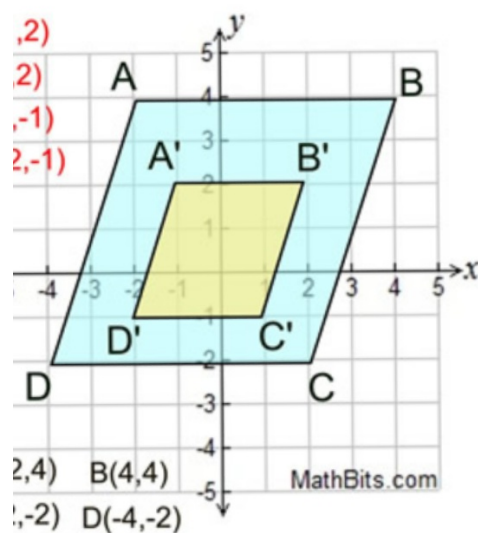
Starting with $\triangle ABC$, draw the dilation image of the triangle with a center at the origin and a scale factor of two.

Notice that every coordinate of the original triangle has been multiplied by the scale factor (x2).

Dilations involve multiplication!

Dilation with scale factor 2, multiply by 2.
 $(x, y) \rightarrow (2x, 2y)$

ation scale factor $\frac{1}{2}$:

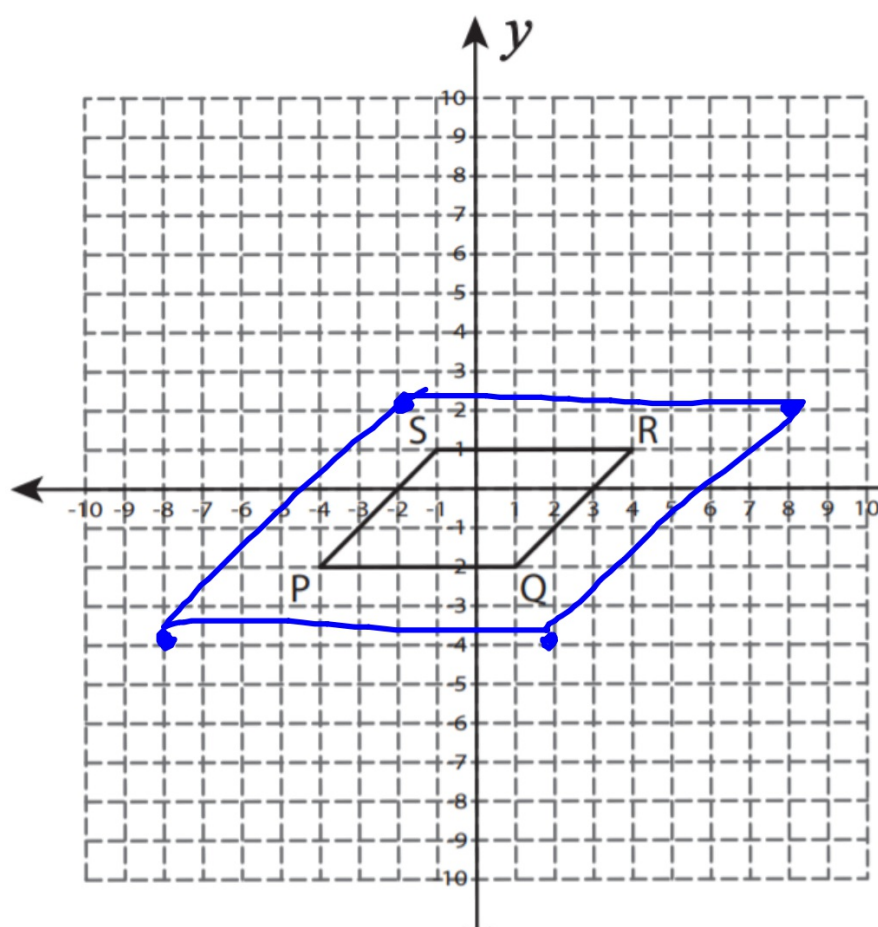


Starting with quadrilateral $ABCD$ (blue), draw the dilation image of the quadrilateral with a center at the origin and a scale factor of $\frac{1}{2}$.

Each vertex of $ABCD$ is multiplied by $\frac{1}{2}$.

Dilation with scale factor $\frac{1}{2}$, multiply by $\frac{1}{2}$.
 $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

Scale factor = 2



P (-4, -2)

S (-1, 1)

R (4, 1)

Q (1, -2)

P (-8, -4)

S (-2, 2)

R (8, 2)

Q (2, -4)

cale factor = 0.5

