

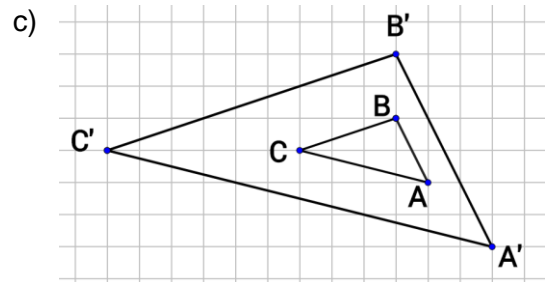
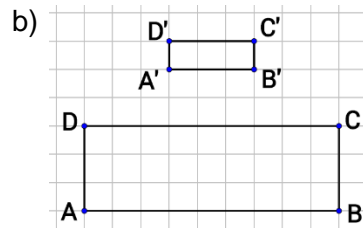
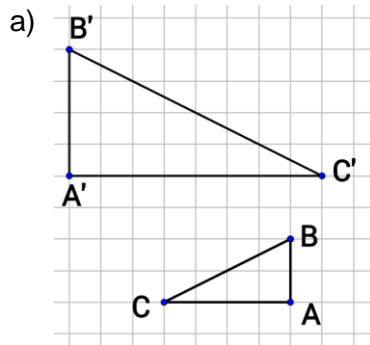
**6A – Transformations**

❖ Vocabulary, Formulas, Theories:

- **Similar Figures:** figures that are the same shape but not necessarily the same size.
- **Transformation:** the process of changing the size or location of an original figure to create a new figure.
  - Pre-Image: the original figure, for example  $\triangle ABC$ .
  - Image: the new figure, for example  $\triangle A'B'C'$
- **Dilation:** a type of transformation that increases (enlargement) or decreases (reduction) the distance of a figure (pre-image) to create a new figure (image)
- **Scale Factor:** the ratio of corresponding sides of similar figures.

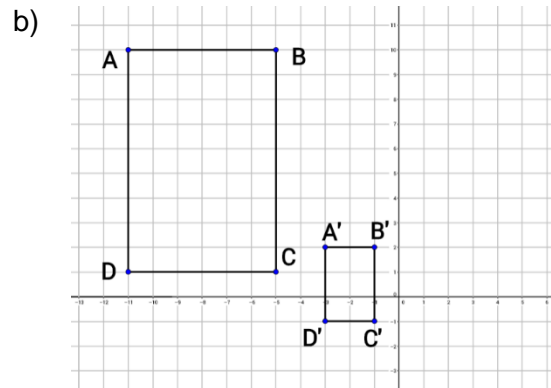
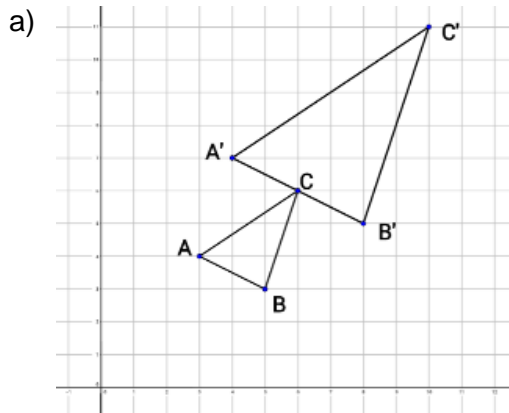
📺 Video - ["Scale Factor - Example" - MathontheWeb \(7:58\)](#)

EX1) Determine the scale factor from  $\triangle ABC$  to  $\triangle A'B'C'$ .



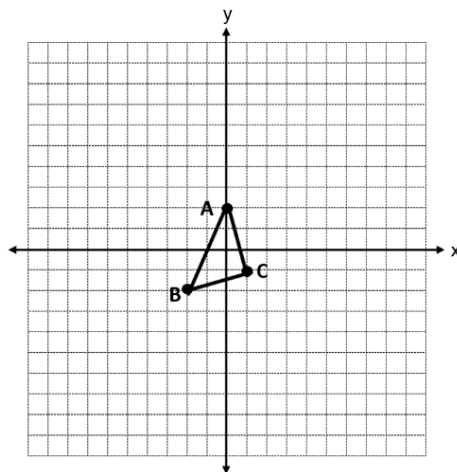
📺 Video - ["Center of a Dilation - Example" - MathontheWeb \(9:23\)](#)

EX2) Determine the center of each dilation and call out the scale factor.

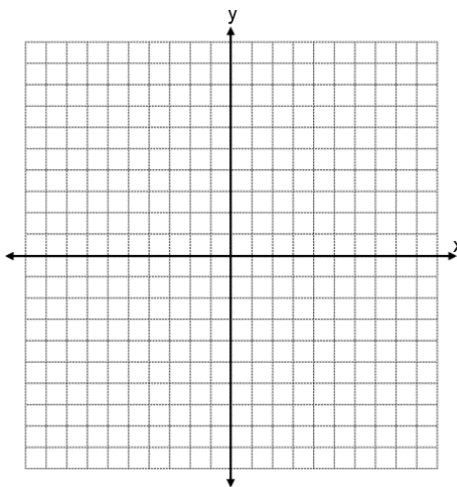


Video - "Dilations - Example 1" - MathontheWeb (9:34)

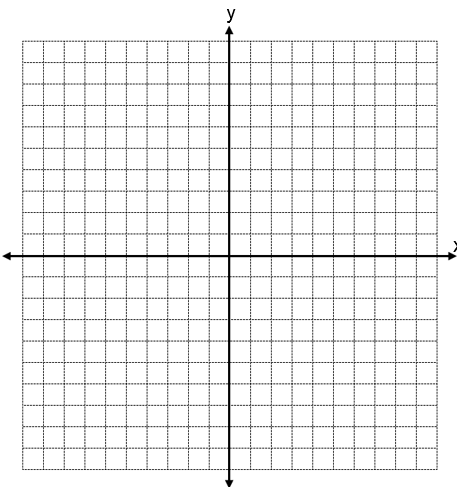
EX3) Dilate pre-image  $\triangle ABC$  with a center of  $(0,0)$  and by a scale factor of 3.



EX4) Graph the pre-image  $\square ABCD$  and dilate it with a center of  $(0,0)$  and by a scale factor of  $\frac{3}{2}$ . Note the points  $A(-2, -4)$ ,  $B(-2, -1)$ ,  $C(0, -1)$ , and  $D(0, -4)$ .

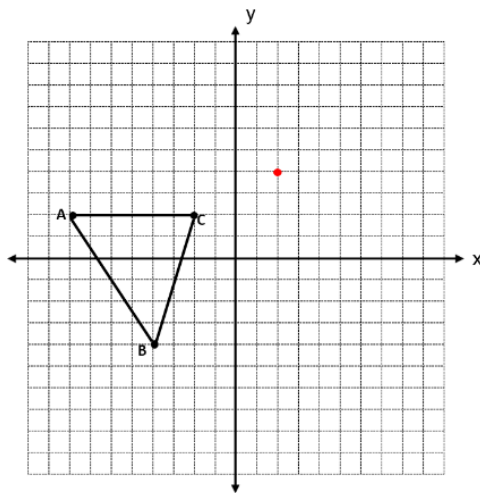


EX5) Graph the pre-image  $\triangle ABC$  and dilate it with a center of  $(0,0)$  and by a scale factor of  $\frac{1}{2}$ . Note the points  $A(-16, 2)$ ,  $B(-8, 2)$ , and  $C(-12, 8)$ .

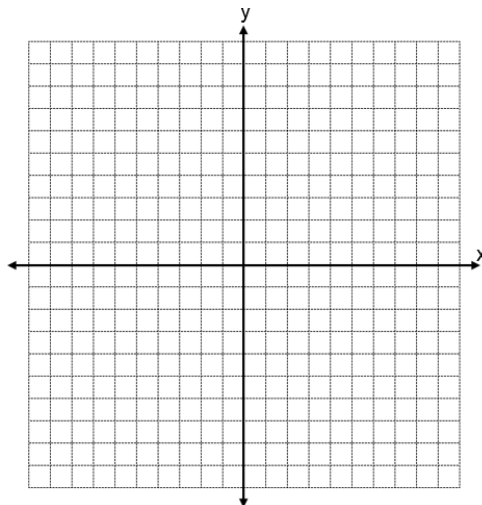


Video - "Dilation - Example 2" - MathontheWeb (4:07)

EX6) Dilate pre-image  $\triangle ABC$  with a center of  $(2, 4)$  and by a scale factor of  $\frac{1}{2}$ .



EX7) Graph the pre-image  $\triangle ABC$  and dilate it with a center of  $(-4, 5)$  and by a scale factor of 2. Note the points  $A(-3, 2)$ ,  $B(-1, 6)$ , and  $C(1, 4)$ .



❖ Extra Resources:

Changing Center of Dilations:

- <http://www.geogebra.org/material/simple/id/125442>
- <http://www.geogebra.org/material/simple/id/80127>

Changing Scale Factors:

- <http://www.geogebra.org/material/simple/id/158546>
- <http://www.geogebra.org/material/simple/id/717745>
- <http://www.geogebra.org/material/simple/id/67652>
- <http://www.geogebra.org/material/simple/id/996495>