

Solve the following system:

$$y = x - 5$$

$$y = -5x + 7$$

$$(2, -3)$$

$$x - 5 = -5x + 7$$

$$+5x$$
$$+8x$$

$$6x - 5 = 7 \quad x = 2$$

$$6x = 12$$

# Dilations

Dilations - Making an object larger or smaller

$\Delta ABC$  with vertices  $A(-1, 0)$ ,  $B(4, 2)$ , and  $C(2, 6)$  is transformed by the ordered pair rule

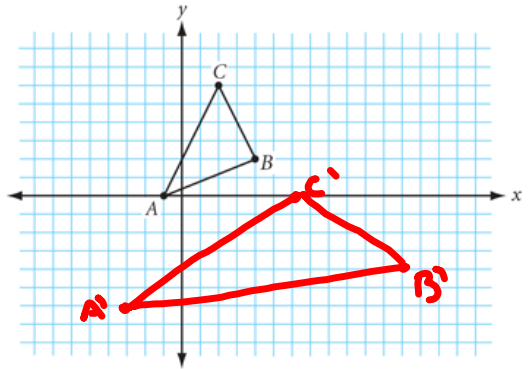
$(x, y) \rightarrow (3x, y - 6)$  creating the image,  $\Delta A'B'C'$ .

a. Graph the image of  $\Delta ABC$  and label it  $\Delta A'B'C'$

$A'(-3, -6)$   $B'(12, -4)$   $C'(6, 0)$

c. Is it a rigid transformation? Is  $\Delta ABC \cong \Delta A'B'C'$ ?

d. What appeared to happen?



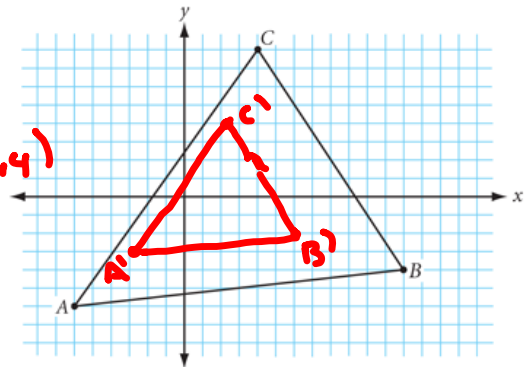
$\triangle ABC$  with vertices  $A(-6, -6)$ ,  $B(12, -4)$ , and  $C(4, 8)$  is transformed by the ordered pair rule  $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$  creating the image  $\triangle A'B'C'$ .

a. Graph the image of  $\triangle ABC$  and label it  $\triangle A'B'C'$

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

c. Is it a rigid transformation? Is  $\triangle ABC \cong \triangle A'B'C'$ ?

d. What appeared to happen?



Dilation - Non rigid transformation

$$(x, y) \longrightarrow (rx, ry)$$

Scale factor - the amount of increase or decrease in size. (r)

Enlargement - r is greater than 1

Reduction - r is less than 1

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