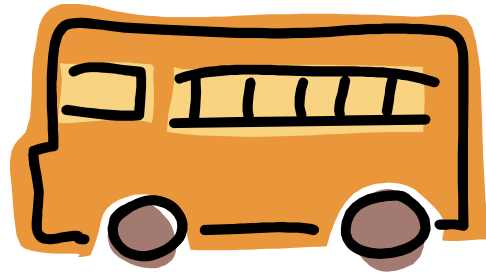


Dilations



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Warm Up

Write the rule for each translation.

1. 2 units right , 3 units up
2. 5 units left, 6 units up
3. 3 units right, 1 unit down
4. 7 units left, 3 units down

Warm Up Answers

1. $(x + 2, y + 3)$

2. $(x - 3, y + 6)$

3. $(x + 3, y - 1)$

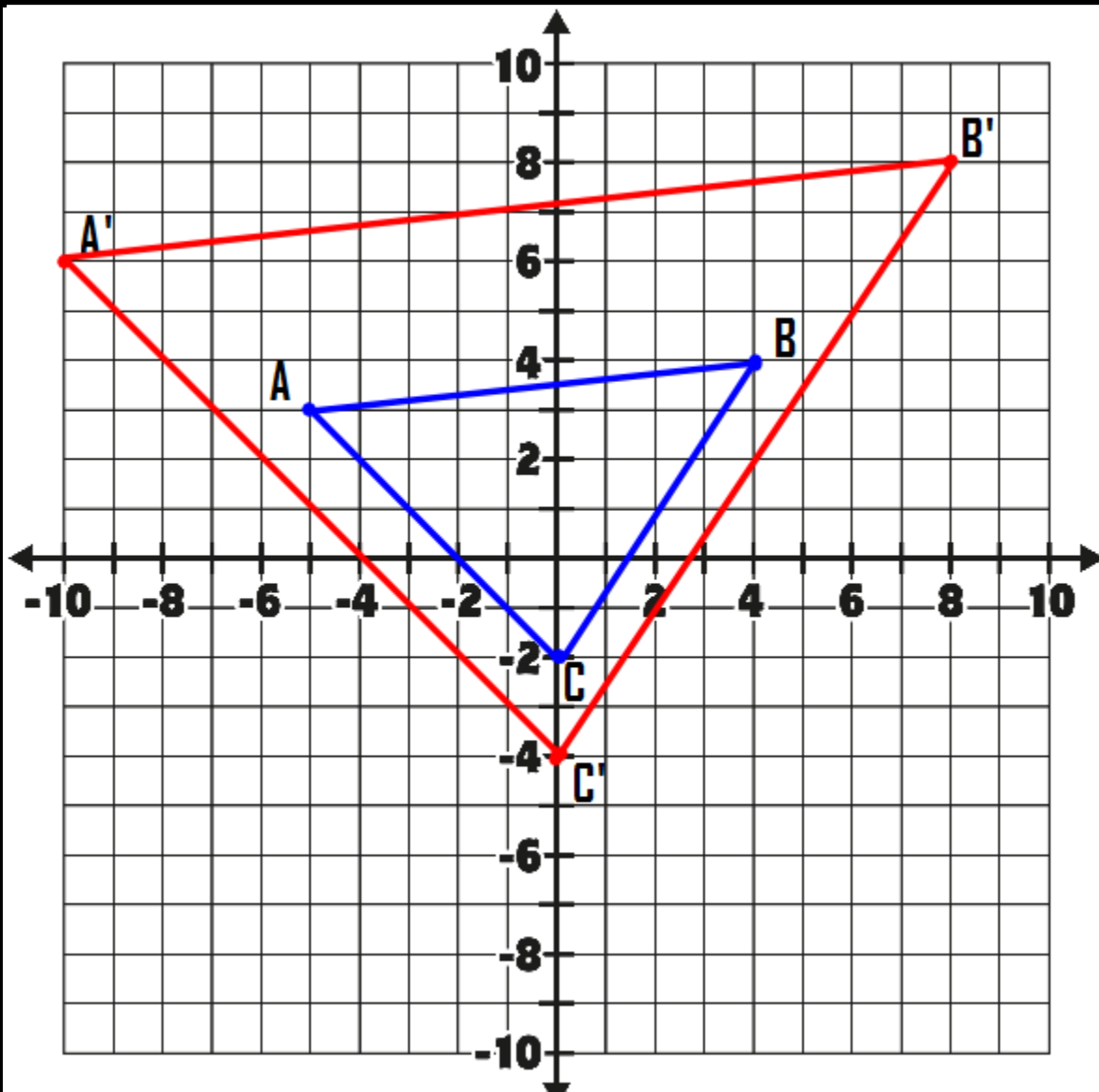
4. $(x - 7, y - 3)$



Dilations



A **dilation** is a type of transformation that changes the size of a figure by a scale factor.



**Triangle
ABC is
dilated
by a
scale
factor
of 2.**

$$A (-5, 3) \longrightarrow A' (-10, 6)$$

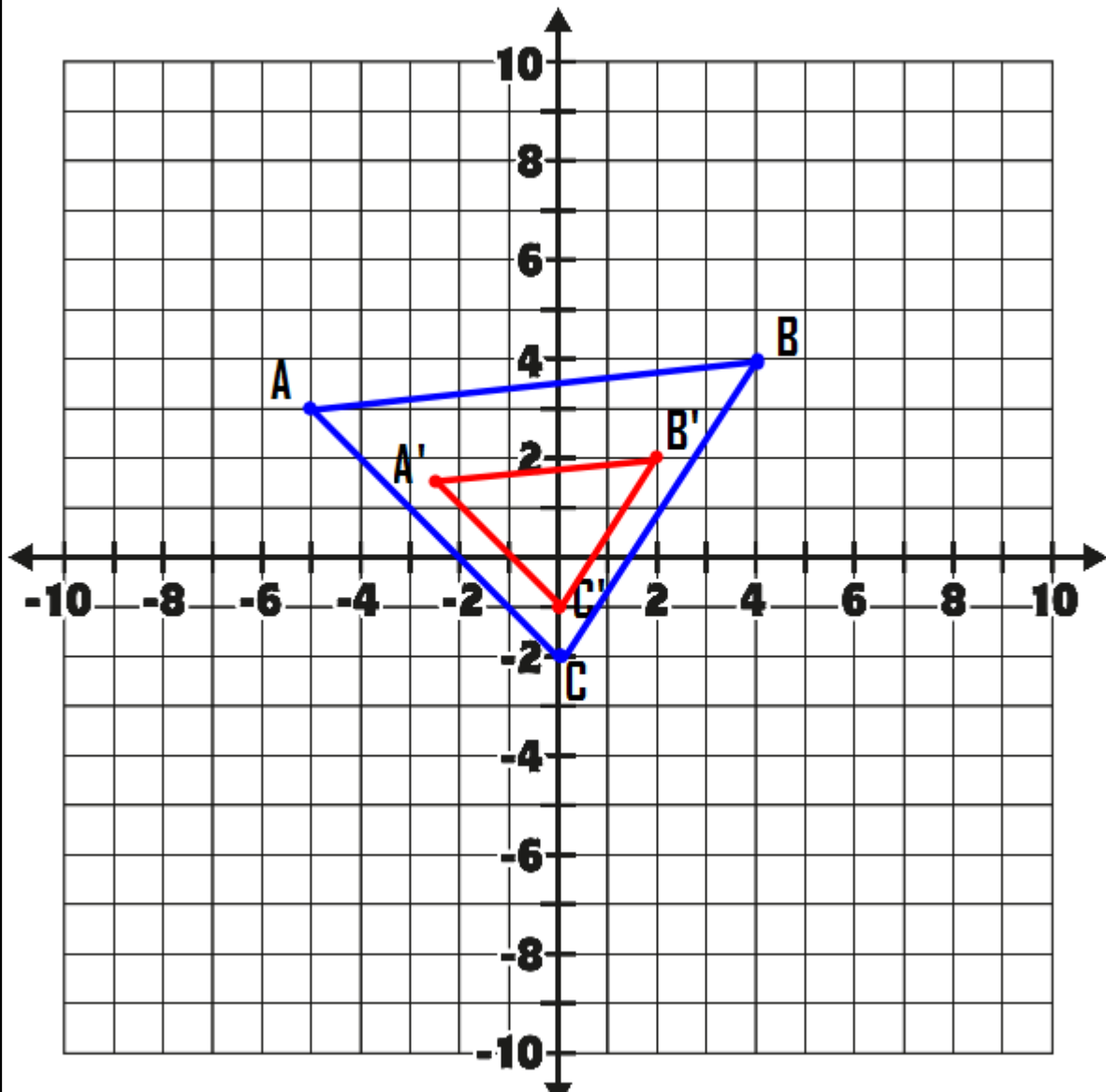
$$B (4, 4) \longrightarrow B' (8, 8)$$

$$C (0, -2) \longrightarrow C' (0, -4)$$

Dilate by a scale of 2.

Multiply both the x and the y value by 2.

$$(x, y) \longrightarrow (2x, 2y)$$



**Triangle
ABC is
dilated
by a
scale
factor of
 $\frac{1}{2}$.**

$$A (-5, 3) \longrightarrow A' (-2.5, 1.5)$$

$$B (4, 4) \longrightarrow B' (2, 2)$$

$$C (0, -2) \longrightarrow C' (0, -1)$$

Dilate by a scale of $\frac{1}{2}$.

Multiply both the x and the y value by $\frac{1}{2}$.

$$(x, y) \longrightarrow \left(\frac{1}{2}x, \frac{1}{2}y\right)$$

Practice

Triangle ABC: A(2,-3), B(-4, 5), C(-5, 0)

Dilate triangle ABC by a scale factor of 2.

Dilate triangle ABC by a scale factor of $\frac{1}{2}$.

Closure

**Write the rule for
dilating a shape by a
scale factor of $\frac{3}{2}$.**