REVIEW: Dilations

Name _____

Key Concept and Vocabulary

Dilation

DILATE

Center of dilation
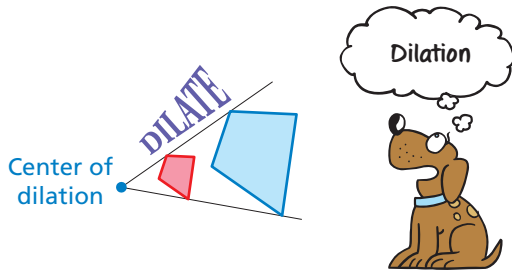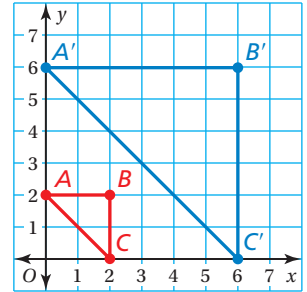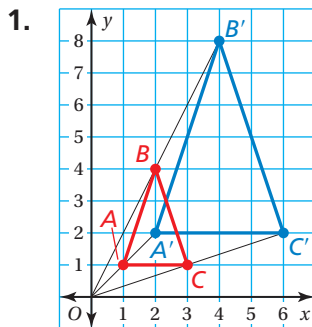
Visual Model

To dilate with respect to the origin, multiply the coordinates of each vertex by the scale factor k.

Skill Example

1.

After a dilation with a scale factor of 2, the coordinates of the image are $A'(2, 2)$, $B'(4, 8)$, and $C'(6, 2)$.

Application Example

2. The location of a building is represented by the points $A(0, 0)$, $B(0, 4)$, $C(8, 4)$, and $D(8, 0)$ in a coordinate plane. An expansion of the building is represented using a dilation with a scale factor of 1.5. What are the coordinates of the image?

$$(x, y) \longrightarrow (1.5x, 1.5y)$$

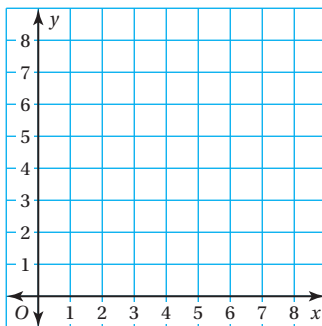The coordinates of the image are $A'(0, 0)$, $B'(0, 6)$, $C'(12, 6)$, and $D'(12, 0)$.
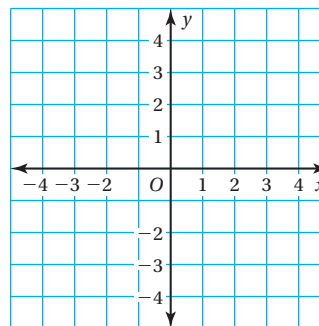
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Draw the figure and its image after a dilation with the given scale factor.

3. $A(1, 0)$, $B(1, 2)$, $C(2, 1)$; $k = 3$

4. $P(-4, -4)$, $Q(-4, 2)$, $R(0, 2)$, $S(4, -4)$; $k = \dfrac{1}{2}$

5. RESTAURANT A restaurant expands a patio using a dilation with a scale factor of 1.75. The dilated patio is represented in the coordinate plane. What were the coordinates of the original patio?

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