Name: _____

Dilations on the Coordinate Plane

Find the coordinates of the image of each triangle.

Learn: A dilation from the origin multiplies both coordinates by the scale factor. Example: (2, 3) with factor 2 → (4, 6).

Example: Triangle A(4, −6), B(−4, −4), C(2, −4) is dilated by a scale factor of 2 centered at the origin. Give the coordinates of the image.

A′B′C′: A′(8, −12), B′(−8, −8), C′(4, −8)

1. Triangle A(−4, −4), B(−2, 0), C(−6, 2) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: _____

2. Triangle A(−4, −4), B(2, 6), C(−4, 4) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: _____

3. Triangle A(2, 2), B(0, −2), C(4, 0) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: _____

4. Triangle A(4, 4), B(−2, −6), C(6, 2) is dilated by a scale factor of 2 centered at the origin. Give the coordinates of the image.

   A′B′C′: _____

5. Triangle A(6, 2), B(−2, 6), C(−6, 4) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: _____

6. Triangle A(−2, 6), B(−4, 4), C(−4, −2) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: _____

7. Triangle A(6, 6), B(4, −6), C(4, 6) is dilated by a scale factor of 1/2 centered at the origin. Give the coordinates of the image.

   A′B′C′: _____

Name: **ANSWER KEY**

Dilations on the Coordinate Plane

Find the coordinates of the image of each triangle.

Learn: A dilation from the origin multiplies both coordinates by the scale factor. Example: (2, 3) with factor 2 → (4, 6).

Example: Triangle A(4, −6), B(−4, −4), C(2, −4) is dilated by a scale factor of 2 centered at the origin. Give the coordinates of the image.

A′B′C′: A′(8, −12), B′(−8, −8), C′(4, −8)

1. Triangle A(−4, −4), B(−2, 0), C(−6, 2) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: A′(−12, −12), B′(−6, 0), C′(−18, 6)

2. Triangle A(−4, −4), B(2, 6), C(−4, 4) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: A′(−12, −12), B′(6, 18), C′(−12, 12)

3. Triangle A(2, 2), B(0, −2), C(4, 0) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: A′(6, 6), B′(0, −6), C′(12, 0)

4. Triangle A(4, 4), B(−2, −6), C(6, 2) is dilated by a scale factor of 2 centered at the origin. Give the coordinates of the image.

   A′B′C′: A′(8, 8), B′(−4, −12), C′(12, 4)

5. Triangle A(6, 2), B(−2, 6), C(−6, 4) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: A′(18, 6), B′(−6, 18), C′(−18, 12)

6. Triangle A(−2, 6), B(−4, 4), C(−4, −2) is dilated by a scale factor of 3 centered at the origin. Give the coordinates of the image.

   A′B′C′: A′(−6, 18), B′(−12, 12), C′(−12, −6)

7. Triangle A(6, 6), B(4, −6), C(4, 6) is dilated by a scale factor of 1/2 centered at the origin. Give the coordinates of the image.

   A′B′C′: A′(3, 3), B′(2, −3), C′(2, 3)