Name: _____

Sequences of Transformations

Apply both transformations in order. Give the coordinates of the final image.

Learn: Do the moves one at a time, in order, and write the new point after each step.

Example: Triangle A(−2, 1), B(−6, −1), C(4, −3) is reflected over the x-axis, then translated 5 left and 3 down. Give the coordinates of the final image.

A″B″C″: A″(−7, −4), B″(−11, −2), C″(−1, 0)

1. Triangle A(−1, 3), B(−2, −2), C(0, 3) is reflected over the x-axis, then translated 2 right and 2 down. Give the coordinates of the final image.

   A″B″C″: _____

2. Triangle A(5, 2), B(2, −3), C(6, −4) is translated 3 right and 5 up, then reflected over the x-axis. Give the coordinates of the final image.

   A″B″C″: _____

3. Triangle A(−2, 4), B(2, −2), C(3, 2) is reflected over the y-axis, then reflected over the x-axis. Give the coordinates of the final image.

   A″B″C″: _____

4. Triangle A(−3, 5), B(3, 4), C(4, −4) is translated 3 right and 3 up, then reflected over the x-axis. Give the coordinates of the final image.

   A″B″C″: _____

5. Triangle A(−4, 0), B(6, −5), C(4, 1) is reflected over the x-axis, then rotated 180° about the origin. Give the coordinates of the final image.

   A″B″C″: _____

6. Triangle A(−2, −5), B(0, 1), C(6, −1) is rotated 90° counterclockwise about the origin, then translated 2 left and 4 down. Give the coordinates of the final image.

   A″B″C″: _____

7. Triangle A(6, −3), B(1, 1), C(−6, 2) is translated 2 right and 5 down, then reflected over the y-axis. Give the coordinates of the final image.

   A″B″C″: _____

Name: **ANSWER KEY**

Sequences of Transformations

Apply both transformations in order. Give the coordinates of the final image.

Learn: Do the moves one at a time, in order, and write the new point after each step.

Example: Triangle A(−2, 1), B(−6, −1), C(4, −3) is reflected over the x-axis, then translated 5 left and 3 down. Give the coordinates of the final image.

A″B″C″: A″(−7, −4), B″(−11, −2), C″(−1, 0)

1. Triangle A(−1, 3), B(−2, −2), C(0, 3) is reflected over the x-axis, then translated 2 right and 2 down. Give the coordinates of the final image.

   A″B″C″: A″(1, −5), B″(0, 0), C″(2, −5)

2. Triangle A(5, 2), B(2, −3), C(6, −4) is translated 3 right and 5 up, then reflected over the x-axis. Give the coordinates of the final image.

   A″B″C″: A″(8, −7), B″(5, −2), C″(9, −1)

3. Triangle A(−2, 4), B(2, −2), C(3, 2) is reflected over the y-axis, then reflected over the x-axis. Give the coordinates of the final image.

   A″B″C″: A″(2, −4), B″(−2, 2), C″(−3, −2)

4. Triangle A(−3, 5), B(3, 4), C(4, −4) is translated 3 right and 3 up, then reflected over the x-axis. Give the coordinates of the final image.

   A″B″C″: A″(0, −8), B″(6, −7), C″(7, 1)

5. Triangle A(−4, 0), B(6, −5), C(4, 1) is reflected over the x-axis, then rotated 180° about the origin. Give the coordinates of the final image.

   A″B″C″: A″(4, 0), B″(−6, −5), C″(−4, 1)

6. Triangle A(−2, −5), B(0, 1), C(6, −1) is rotated 90° counterclockwise about the origin, then translated 2 left and 4 down. Give the coordinates of the final image.

   A″B″C″: A″(3, −6), B″(−3, −4), C″(−1, 2)

7. Triangle A(6, −3), B(1, 1), C(−6, 2) is translated 2 right and 5 down, then reflected over the y-axis. Give the coordinates of the final image.

   A″B″C″: A″(−8, −8), B″(−3, −4), C″(4, −3)