



Lesson Objectives (p. 262):

Vocabulary

1. Translation matrix (p. 262): _____

2. Reflection matrix (p. 263): _____

3. Rotation matrix (p. 264): _____

Key Concepts

4. **Get Organized** Complete the summary by filling in a matrix expression. Q is a triangle represented by its 2×3 coordinate matrix. (p. 264).

TRANSFORMATION	MATRIX OPERATION
Translate Q vertically	
Translate Q horizontally	
Enlarge or reduce Q	
Reflect Q across the x -axis or y -axis	
Rotate Q 90° clockwise or counterclockwise	



Lesson Objectives (p. 262):

use matrices to transform a plane figure.

Vocabulary

1. Translation matrix (p. 262): a matrix used to translate coordinates on the coordinate plane.
2. Reflection matrix (p. 263): a matrix that creates a mirror image by reflecting each vertex over a specific line of symmetry.
3. Rotation matrix (p. 264): a matrix used to rotate a figure.

Key Concepts

4. **Get Organized** Complete the summary by filling in a matrix expression. Q is a triangle represented by its 2×3 coordinate matrix. (p. 264).

TRANSFORMATION	MATRIX OPERATION
Translate Q vertically	$Q + \begin{bmatrix} 0 & 0 & 0 \\ -2 & -2 & -2 \end{bmatrix}$
Translate Q horizontally	$Q + \begin{bmatrix} 3 & 3 & 3 \\ 3 & 0 & 0 \end{bmatrix}$
Enlarge or reduce Q	$4Q$, or $0.5Q$
Reflect Q across the x -axis or y -axis	$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}Q$, or $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}Q$
Rotate Q 90° clockwise or counterclockwise	$\begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}Q$, or $\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}Q$