Name _____ Date _____ Pd _____

CYU 1.5.3 Transforming Matrices

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Translations	1	6	9 – 14
Reflections		4, 8	9 – 14
Rotations		3, 5	9 – 14
Dilations	2	7	9 - 14

Graph the new image given the transformations. Use correct notation to write your answer matrix to the side. Box your final answer.
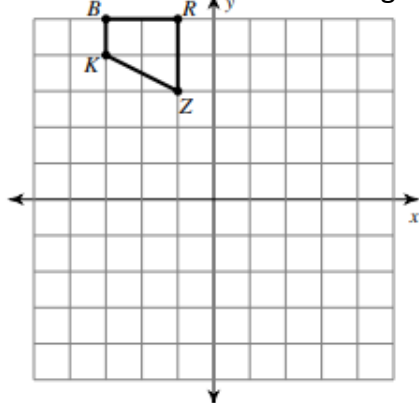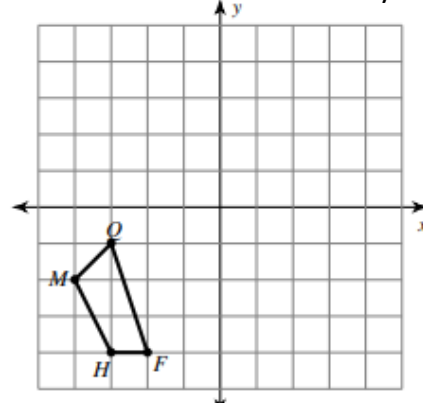
1. 2 units left and 7 units up.
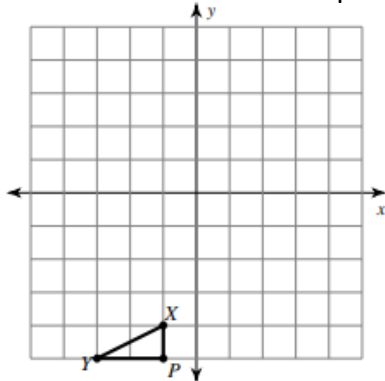
2. Dilation of 2.5
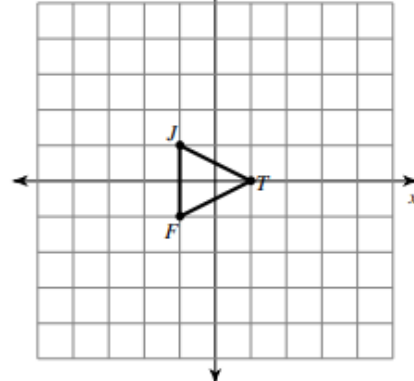
3. 180° rotation about the origin

4. Reflection across the y-axis

Find the new image's vertices after the given transformation. Show all work for full credit. Box your final answer. Be sure to use correct notation.

5. Rotate 90°CCW

$$\begin{bmatrix} -4 & 1 & -2 \\ -4 & -3 & -5 \end{bmatrix}$$

6. 5 units right and 5 units down

$$\begin{bmatrix} 2 & 0 & 1 & 4 \\ -3 & 0 & 0 & -2 \end{bmatrix}$$

7. Dilation of $\frac{1}{4}$

$$\begin{bmatrix} -1 & 2 & -1 \\ 1 & 2 & -1 \end{bmatrix}$$

8. Reflection across the x-axis

$$\begin{bmatrix} -5 & -2 & -1 \\ -2 & 0 & -3 \end{bmatrix}$$

Describe the transformations that occurred in detail to get from the original matric to the new image.

9.
$$\begin{bmatrix} 1 & 1 & 4 & 5 \\ 2 & 3 & 2 & 1 \end{bmatrix}$$
to
$$\begin{bmatrix} 0.5 & 0.5 & 2 & 2.5 \\ 1 & 1.5 & 1 & 0.5 \end{bmatrix}$$

10.
$$\begin{bmatrix} -4 & -3 & -1 \\ -3 & 1 & 0 \end{bmatrix}$$
to
$$\begin{bmatrix} -1 & 0 & 2 \\ -3 & 1 & 0 \end{bmatrix}$$

11.
$$\begin{bmatrix} 1 & 3 & 4 & 5 \\ 0 & 3 & 2 & -3 \end{bmatrix}$$
to
$$\begin{bmatrix} -1 & -3 & -4 & -5 \\ 0 & 3 & 2 & -3 \end{bmatrix}$$

12.
$$\begin{bmatrix} -3 & 1 & 0 \\ 2 & 5 & 3 \end{bmatrix}$$
to
$$\begin{bmatrix} 2 & 5 & 3 \\ 3 & -1 & 0 \end{bmatrix}$$

13.
$$\begin{bmatrix} -3 & -1 & 0 \\ -5 & -2 & -3 \end{bmatrix}$$
to
$$\begin{bmatrix} -2 & 0 & 1 \\ -2 & 1 & 0 \end{bmatrix}$$

14.
$$\begin{bmatrix} -3 & -4 & -1 & 1 \\ -4 & -1 & 3 & -2 \end{bmatrix}$$
to
$$\begin{bmatrix} 3 & 4 & 1 & -1 \\ 4 & 1 & -3 & 2 \end{bmatrix}$$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Basic   Intermediate   Advanced   Solved ALL!