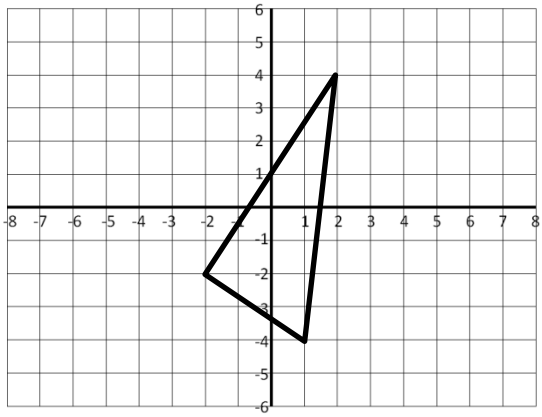
Transformations – Mixed Questions

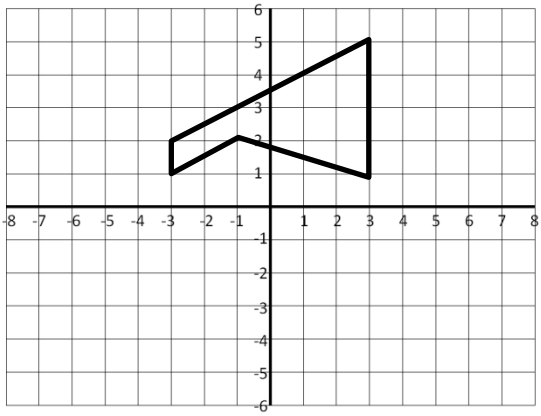
For Q1-2, make sure you label the **object** and **image**.

ROTATION

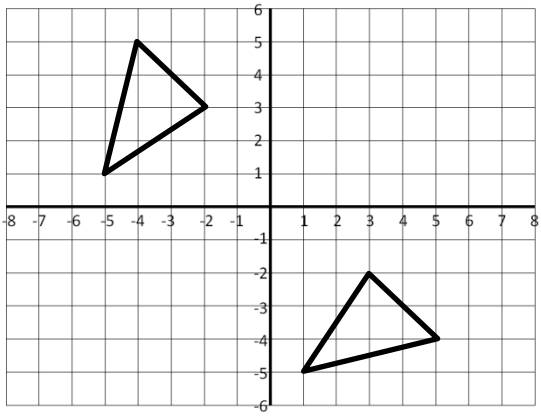
1) Reflect this shape in the line y = -x



2) Reflect this shape in the line x = -1

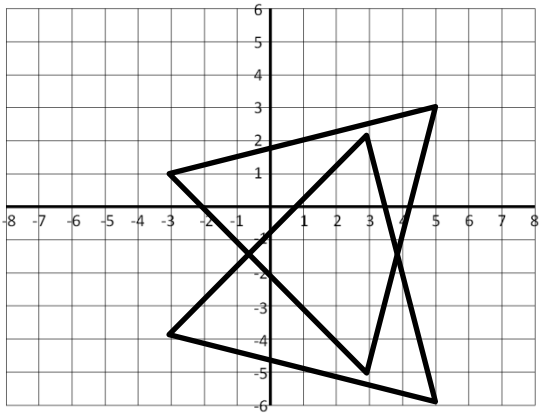


3) Write the equation of the line of reflection.



Equation: _____

4) Write the equation of the line of reflection.



Equation: _____

TRANSLATION

5) A point (3,5) is translated to (1,6). What was the translation vector?

_____

6) A point (-3,5) is translated by the transformation vector $\begin{matrix}-2\\-3\end{matrix}$. What is the resulting point?

_____

7) A point (-2, 3) is translated by the transformation vector $\begin{matrix}-3\\4\end{matrix}$. What is the resulting point?

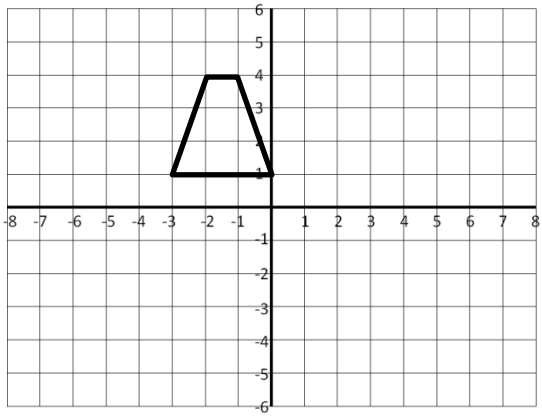
_____

8) A point (-2,5) is translated to (6,1). What was the translation vector?

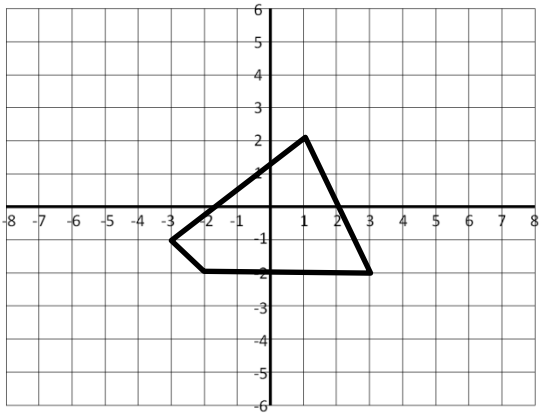
_____

For Q9-10, make sure you label the object and image.

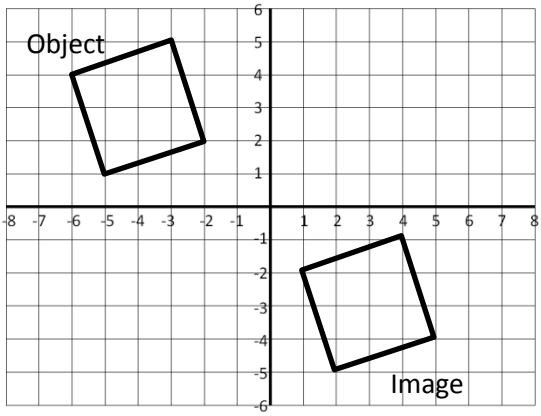
9) Translate the following shape by the translation vector $\begin{matrix}3\\-4\end{matrix}$.



10) Translate the following shape by the translation vector $\begin{matrix}-2\\-3\end{matrix}$.

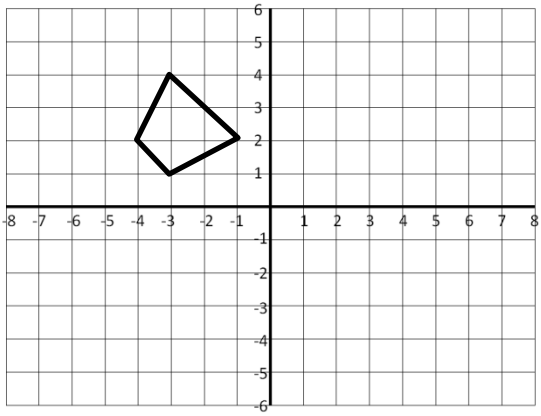


11) What was the translation vector?

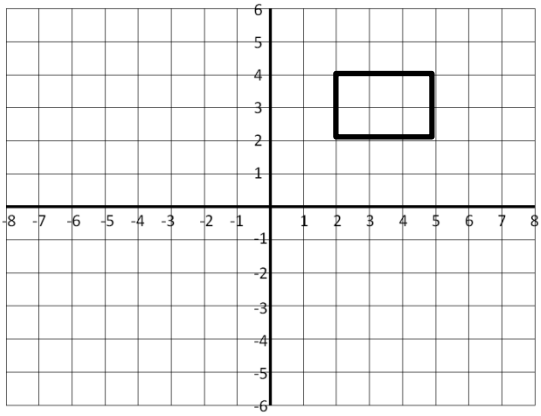


ROTATION

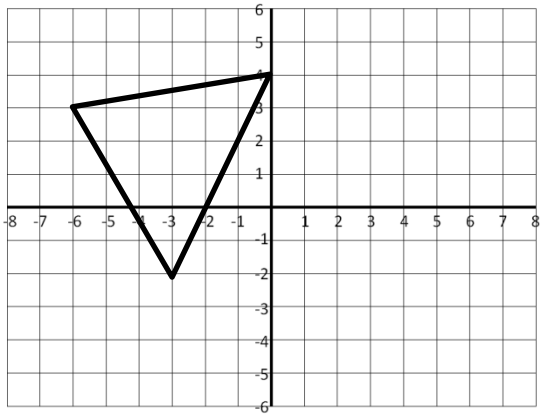
12) Rotate this shape 180° about the point (-1, 1).



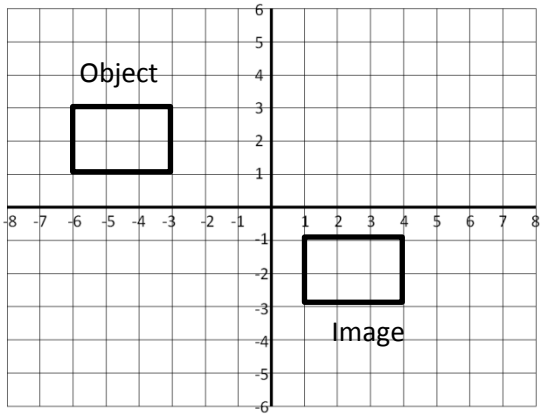
13) Rotate this shape 90° anticlockwise about the point (1, 1).



14) Rotate this shape 90° clockwise about the point (-2, 2).

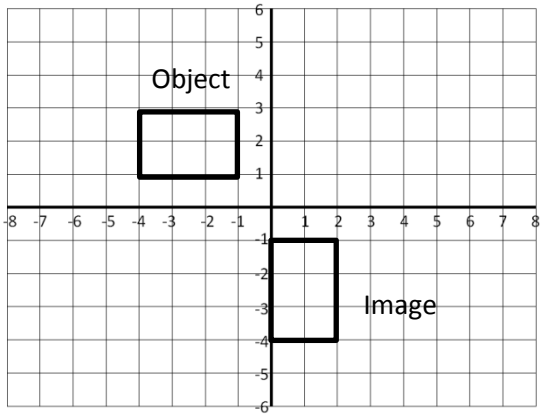


15) Describe the rotation.



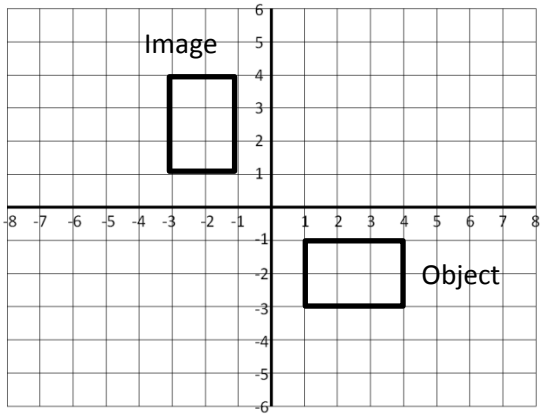
_____

16) Describe the rotation.



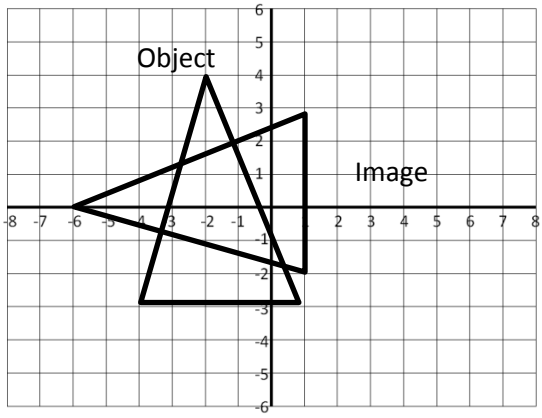
_____

17) Describe the rotation.



_____

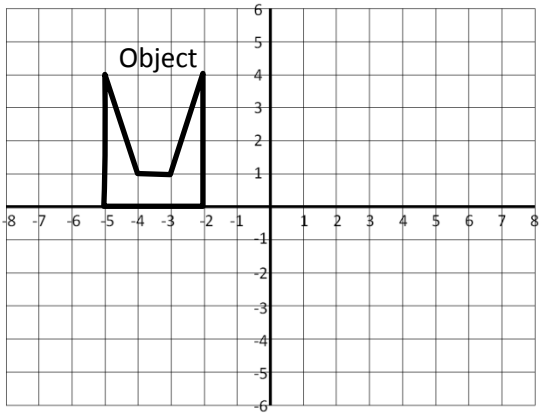
18) Describe the rotation.



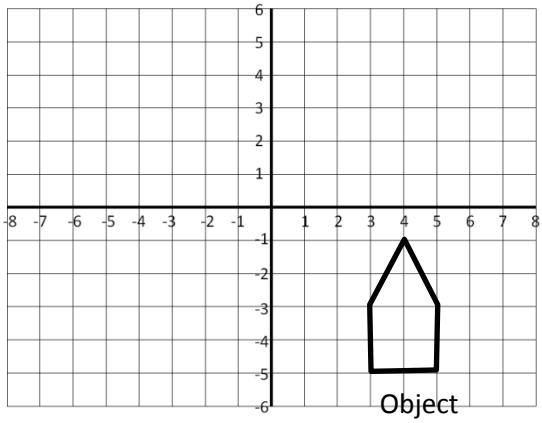
_____

MULTIPLE TRANSFORMATIONS

19) Transform this shape by first reflecting it in the line y = -x, then rotating it 90° clockwise about the point (3 , -2).



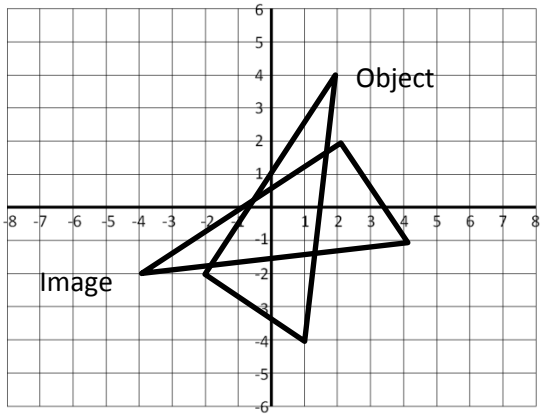
20) Transform this shape by translating it by $\begin{matrix} -1 \\ 7 \end{matrix}$, then rotating it 180 about the point (0,1).



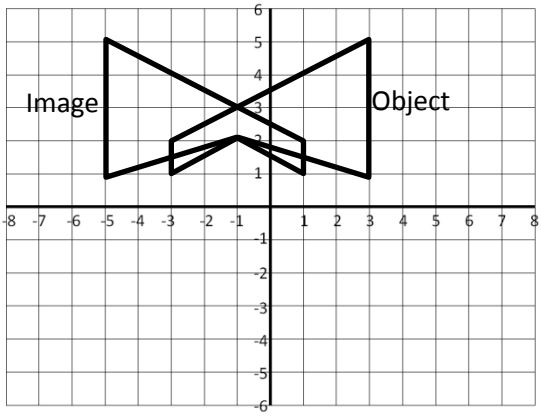
Transformations – Answers

ROTATION

1) Reflect this shape in the line y = -x



2) Reflect this shape in the line x = -1



3) Write the equation of the line of reflection.

Equation: **y = x**

4) Write the equation of the line of reflection.

Equation: **y = -1.5**

TRANSLATION

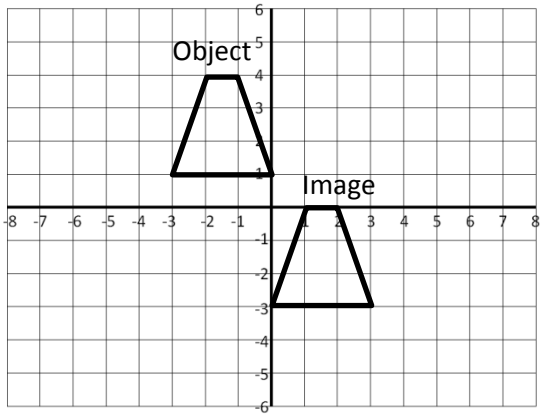
5) $\begin{matrix}\mathbf{-2}\\\mathbf{1}\end{matrix}$

6) **(-5, 2)**

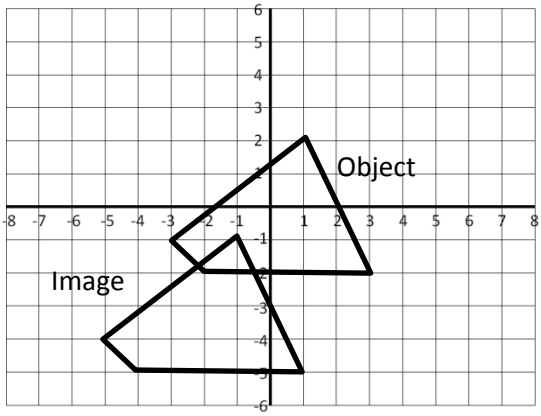
7) **(-5, 7)**

8) $\begin{matrix}\mathbf{8}\\\mathbf{-4}\end{matrix}$

9) Translate the following shape by the translation vector $\begin{matrix}3\\-4\end{matrix}$.



10) Translate the following shape by the translation vector $\begin{matrix}-2\\-3\end{matrix}$.

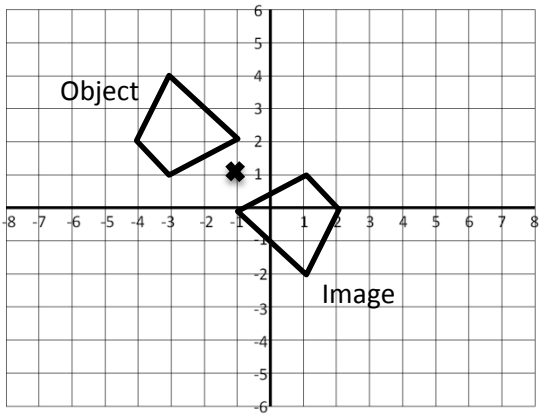


11) What was the translation vector?

$\begin{matrix}\mathbf{7}\\\mathbf{-6}\end{matrix}$

ROTATION

12) Rotate this shape 180° about the point (-1, 1).



15) Describe the rotation.

180° about the point (-1, 0).

16) Describe the rotation.

90° clockwise about the point (-3, -2).

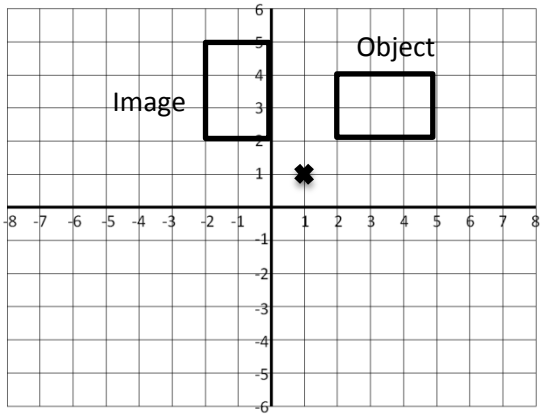
17) Describe the rotation.

90° anticlockwise about the point (-2, -2).

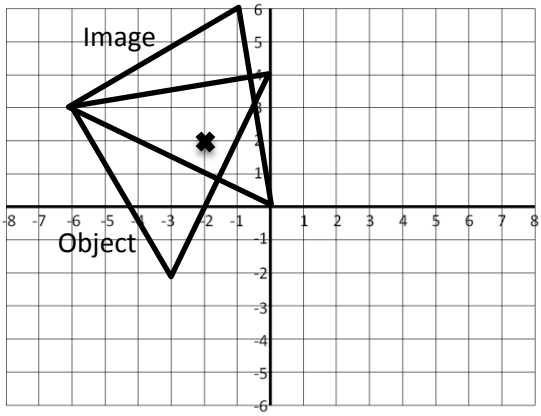
18) Describe the rotation.

90° anticlockwise about the point (-2, 0).

13) Rotate this shape 90° anticlockwise about the point (1, 1).

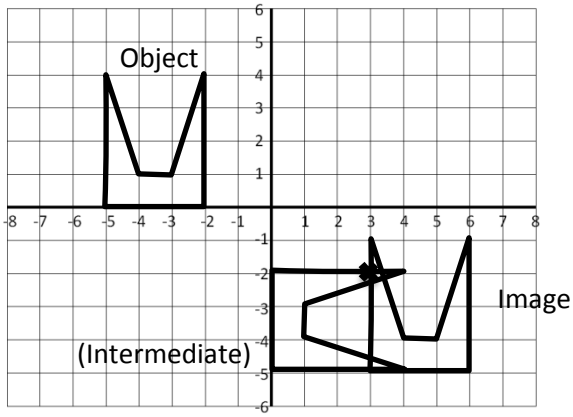
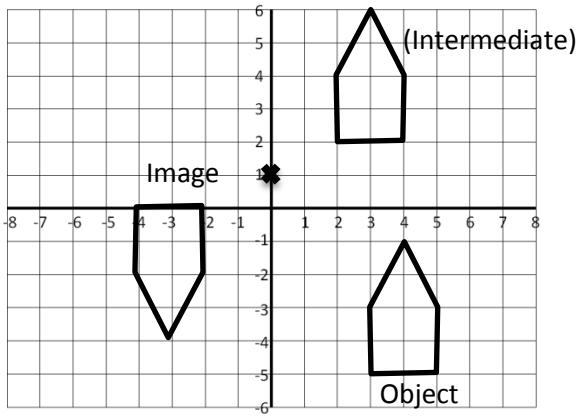


14) Rotate this shape 90° clockwise about the point (-2, 2).



MULTIPLE TRANSFORMATIONS

19) Transform this shape by first reflecting it in the line y = -x, then rotating it 90° clockwise about the point (3 , -2).



20) Transform this shape by translating it by $\begin{matrix} -1 \\ 7 \end{matrix}$, then rotating it 180 about the point (0,1).