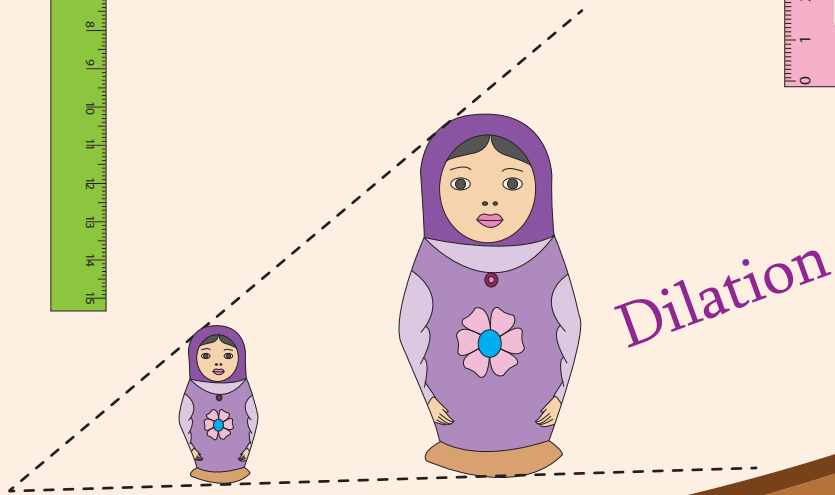
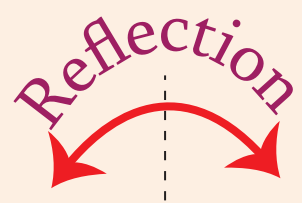
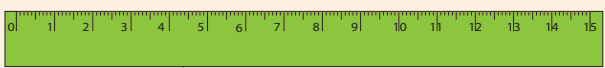
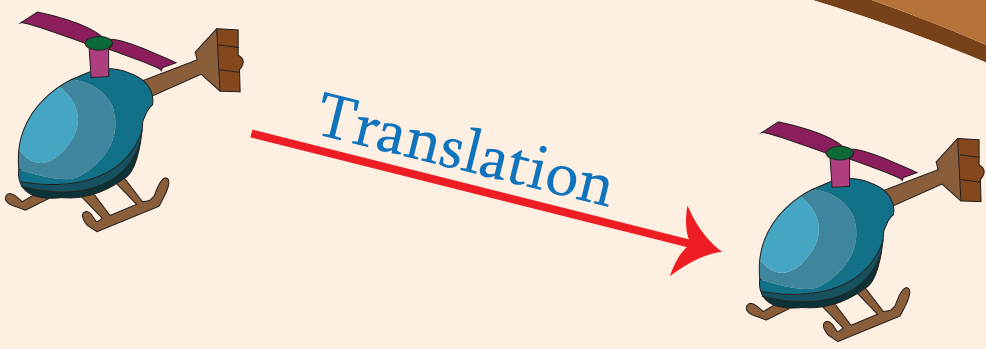


# 8th Grade

# Transformations

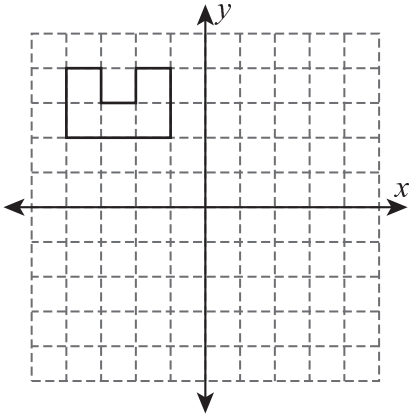


# Workbook 1

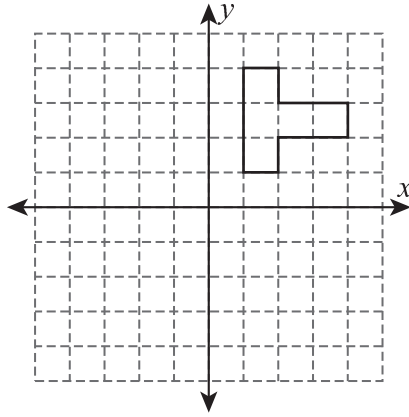
## Translation of Shapes

Graph the image of each shape using the translation given.

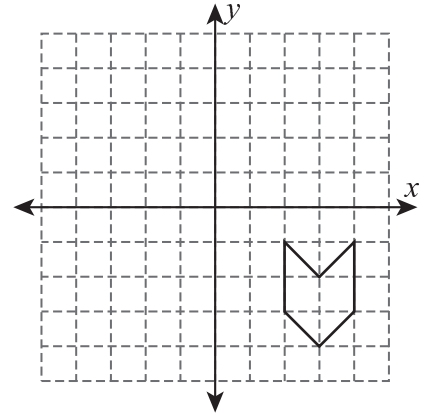
1) 5 units down and 4 units right



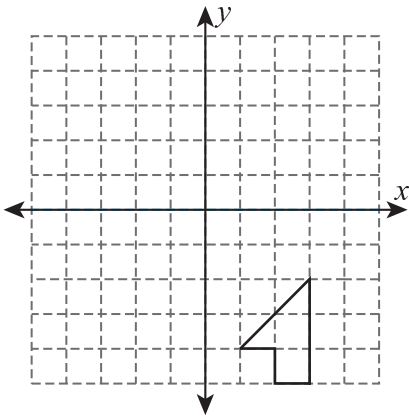
2) 2 units left and 6 units down



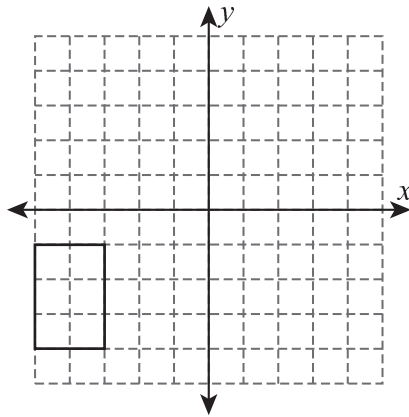
3) 7 units left



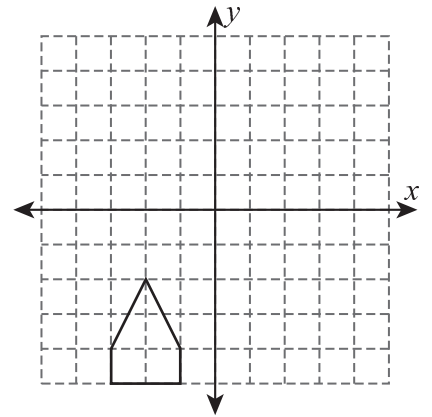
4) 2 units left and 3 units up



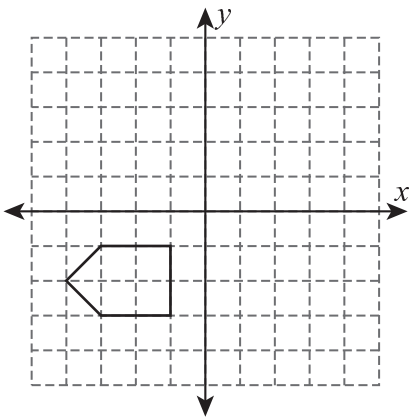
5) 6 units up and 8 units right



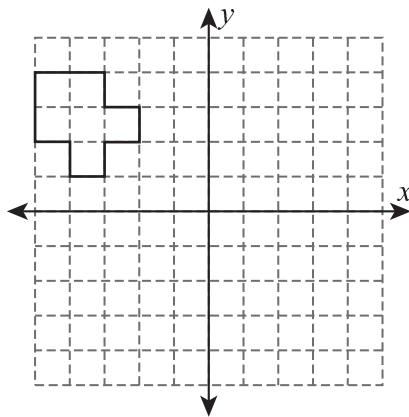
6) 1 unit right and 5 units up



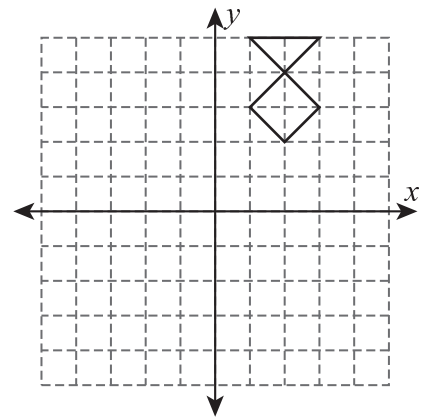
7) 3 units up and 1 unit left



8) 5 units down



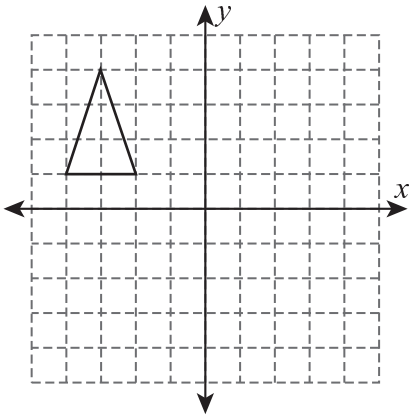
9) 2 units down and 4 units left



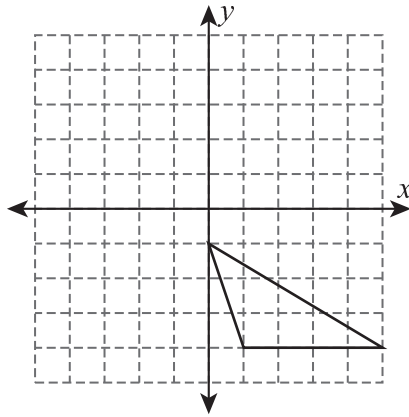
## Translation of Triangles

Graph the image of each triangle using the given translation.

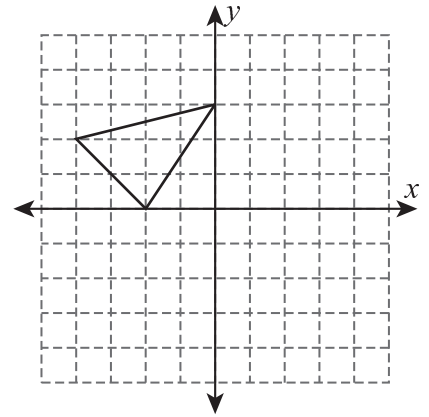
1) 4 units down



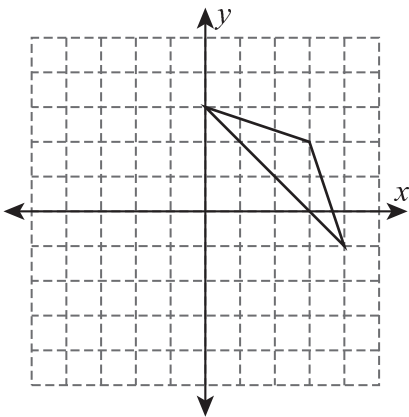
2) 6 units up and 5 units left



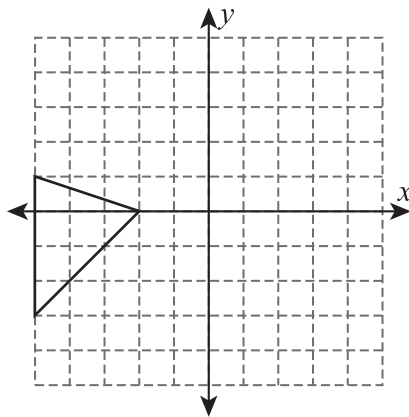
3) 5 units right and 3 units down



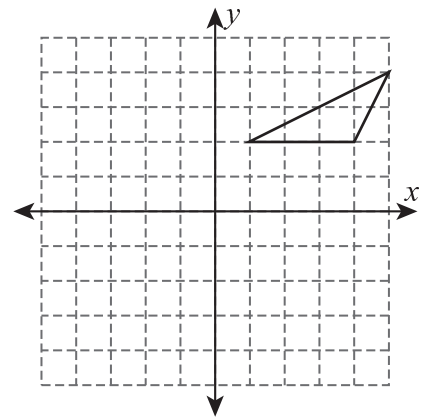
4) 5 units left and 1 unit down



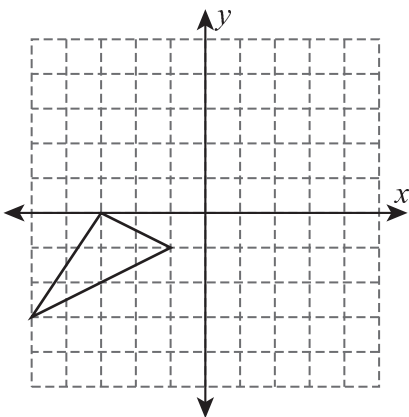
5) 7 units right and 2 units up



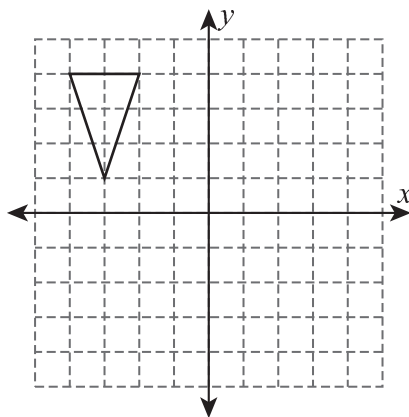
6) 3 units down and 4 units left



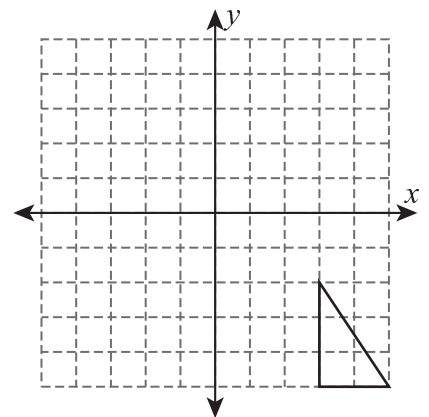
7) 2 units up and 6 units right



8) 4 units down and 1 unit right



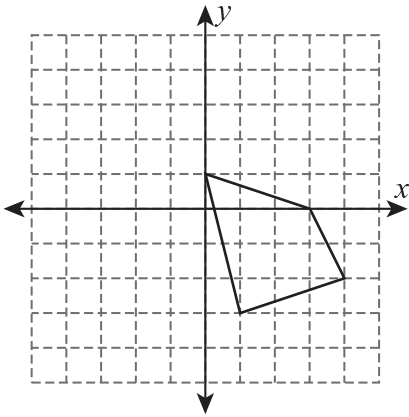
9) 8 units left and 7 units up



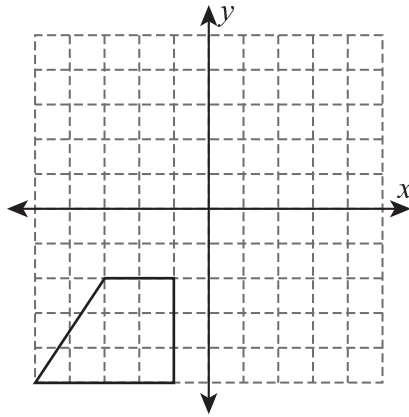
## Translation of Quadrilaterals

Graph the image of each quadrilateral using the translation given.

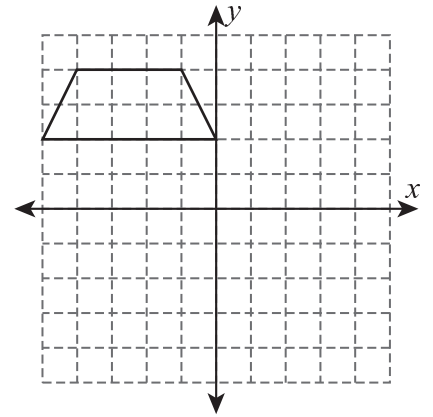
1) 3 units up and 5 units left



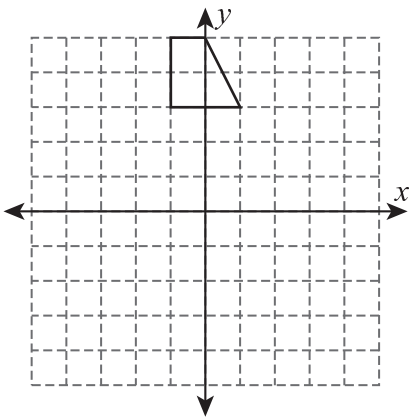
2) 6 units right and 4 units up



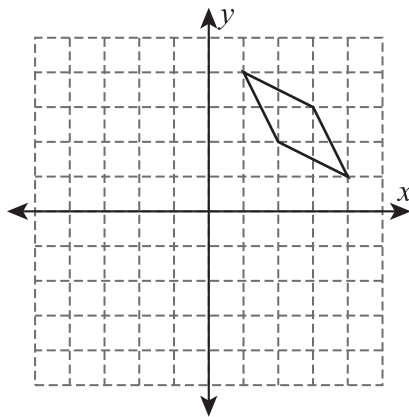
3) 7 units down and 2 units right



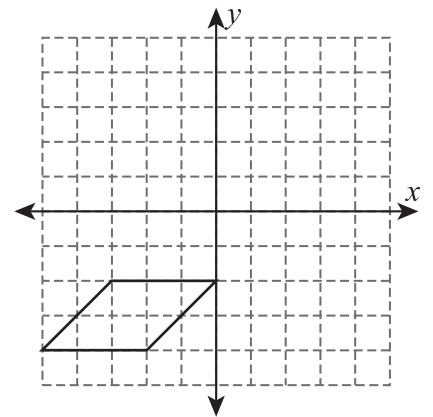
4) 8 units down



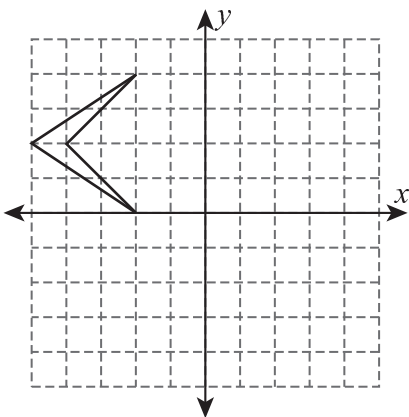
5) 5 units down and 3 units left



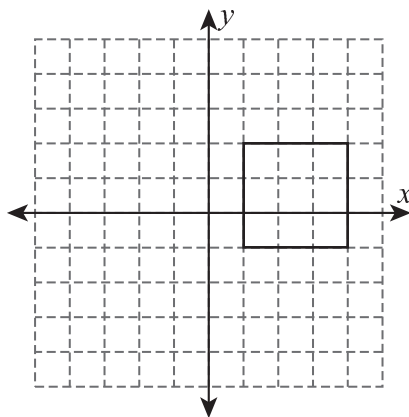
6) 4 units up and 4 units right



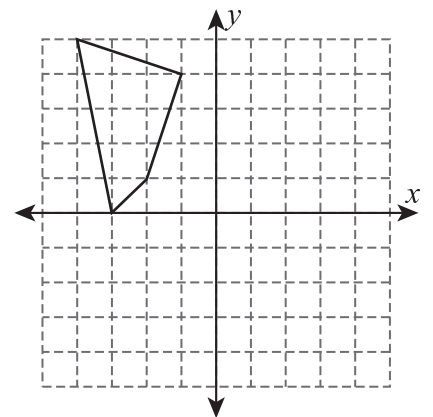
7) 4 units down and 7 units right



8) 3 units left and 2 units up



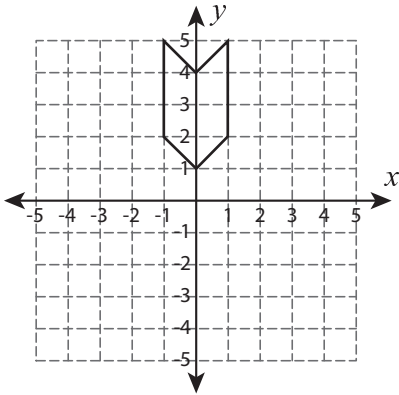
9) 6 units right and 1 unit down



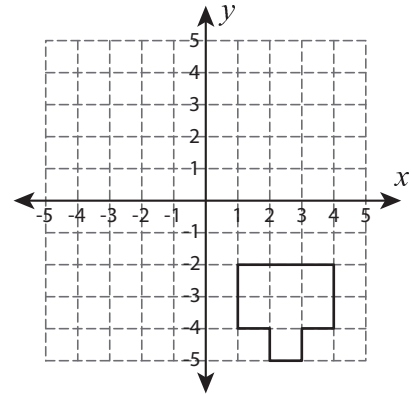
## Rotate the Shapes

Graph the image of each shape after rotating it about the origin.

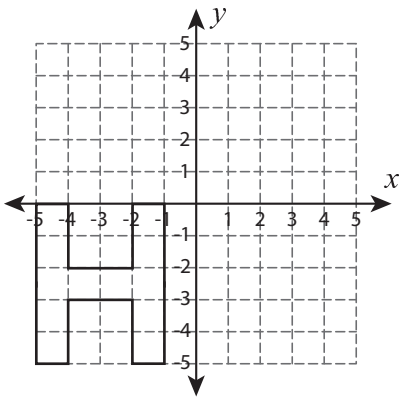
1)  $180^\circ$  rotation



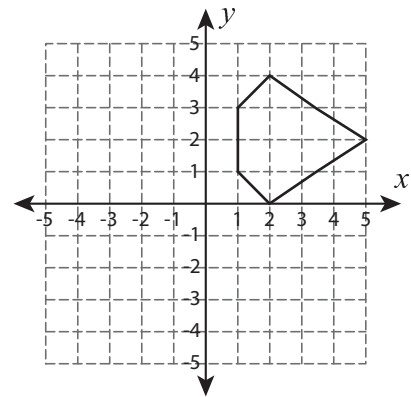
2)  $90^\circ$  clockwise rotation



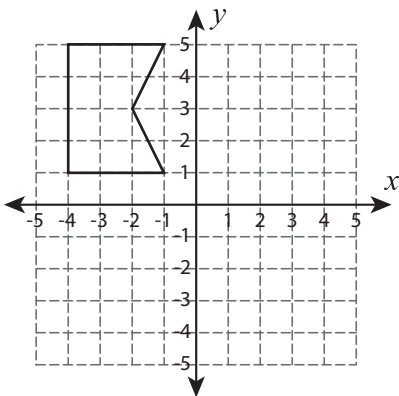
3)  $90^\circ$  counterclockwise rotation



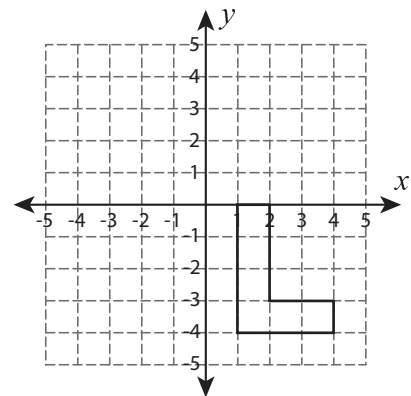
4)  $180^\circ$  rotation



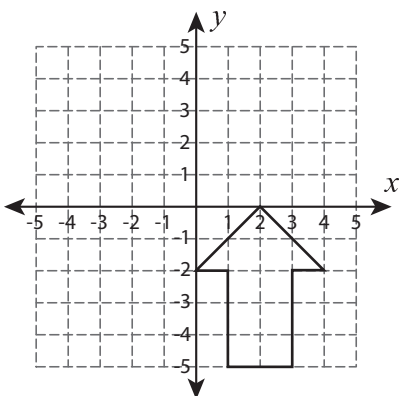
5)  $90^\circ$  clockwise rotation



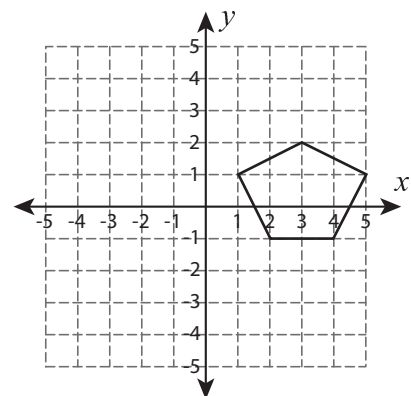
6)  $90^\circ$  counterclockwise rotation



7)  $180^\circ$  rotation



8)  $90^\circ$  clockwise rotation



Pages 5 to 12 are available only for members.

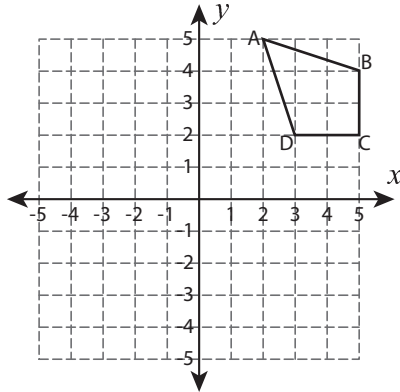
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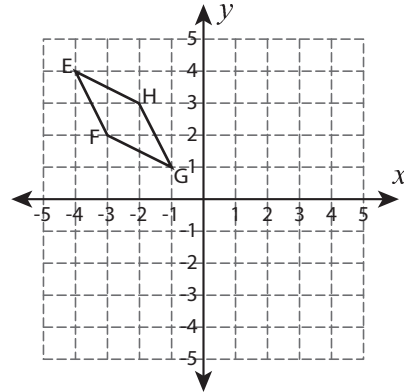
## Transform the Quadrilaterals

Graph the image of each quadrilateral after the given transformation.

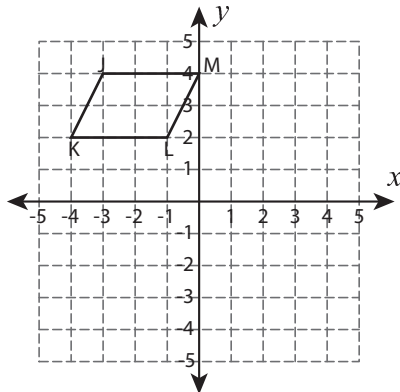
1) Reflection across the line  $y = 1$



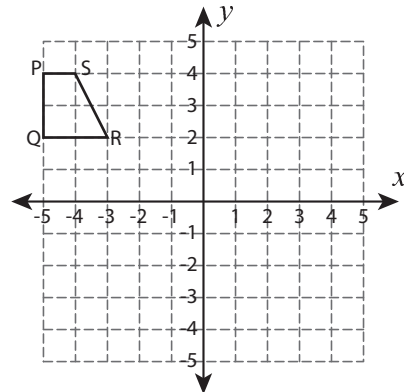
2)  $90^\circ$  counterclockwise rotation about the origin



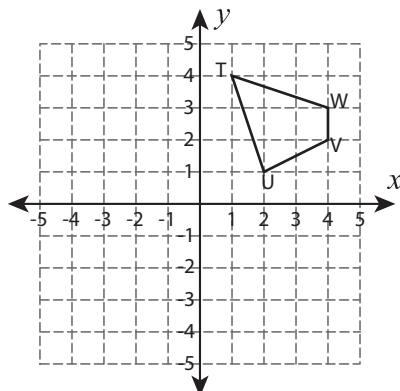
3) Translate 3 units down and 4 units right



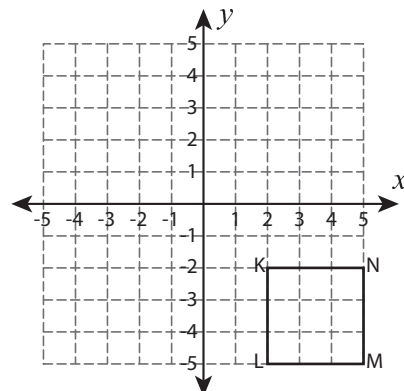
4) Reflection across the line  $x = -1$



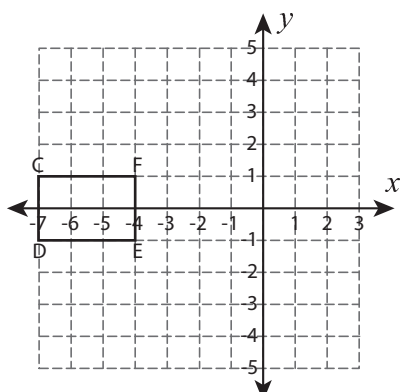
5)  $90^\circ$  clockwise rotation about the origin



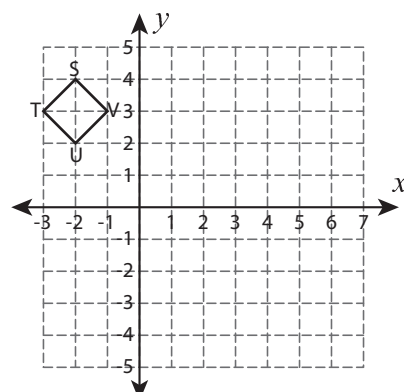
6) Translate 6 units up and 2 units left



7) Reflection across the line  $y = -2$



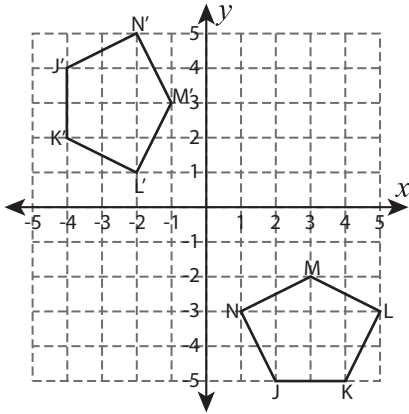
8)  $180^\circ$  rotation about the origin



# Multiple Choice

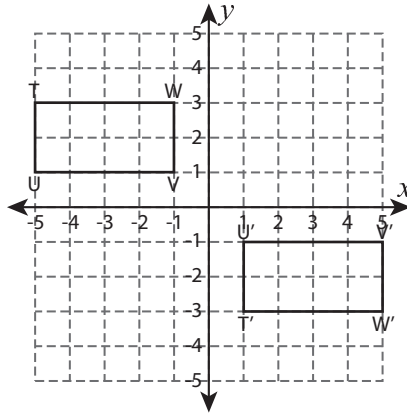
Choose the correct transformation.

1)



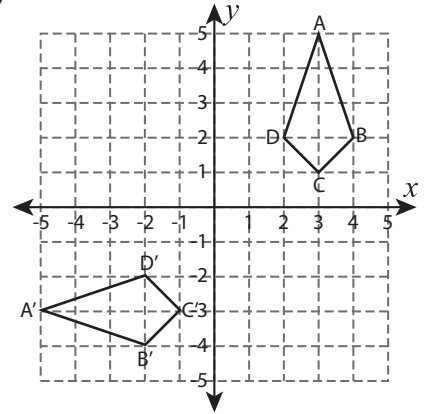
- a) reflected, then translated
- b) rotated, then translated
- c) rotated, then reflected

2)



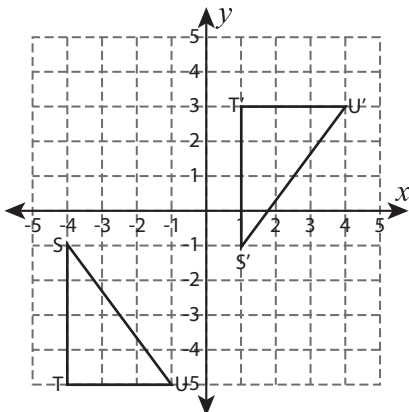
- a) translated, then reflected
- b) reflected, then rotated
- c) translated, then rotated

3)



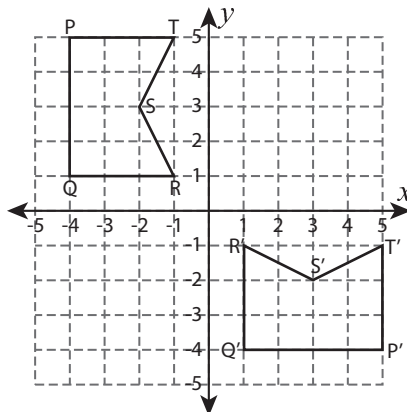
- a) rotated, then translated
- b) translated, then reflected
- c) reflected, then rotated

4)



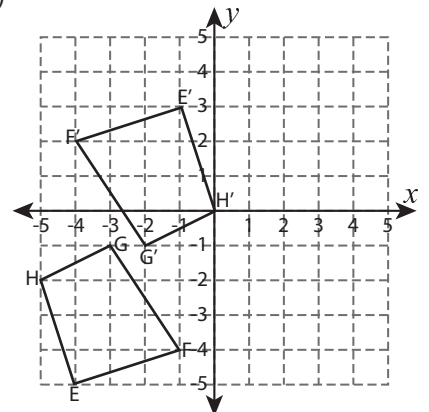
- a) rotated, then reflected
- b) translated, then rotated
- c) reflected, then translated

5)



- a) translated, then reflected
- b) rotated, then reflected
- c) rotated, then translated

6)



- a) translated, then rotated
- b) reflected, then translated
- c) rotated, then reflected

## Translation - Function

Write the translated function.

1)  $f(x) = 12x + 3$  ; shifts 2 units left.

$$g(x) = \underline{\hspace{2cm}}$$

2)  $f(x) = -7x - 4$  ; shifts 5 units down.

$$g(x) = \underline{\hspace{2cm}}$$

3)  $f(x) = 11x + 10$  ; shifts 3 units up.

$$g(x) = \underline{\hspace{2cm}}$$

4)  $f(x) = 8x - 6$  ; shifts 7 units right.

$$g(x) = \underline{\hspace{2cm}}$$

5)  $f(x) = -5x + 7$  ; shifts 1 unit left.

$$g(x) = \underline{\hspace{2cm}}$$

6)  $f(x) = 6x - 12$  ; shifts 4 units down.

$$g(x) = \underline{\hspace{2cm}}$$

## Reflection

If  $g(x)$  is a reflection of  $f(x)$  across the given axis, then find  $g(x)$ .

1)  $f(x) = 4x + 2$  ; reflection across the  $x$ -axis.

$$g(x) = \underline{\hspace{2cm}}$$

2)  $f(x) = -3x - 10$  ; reflection across the  $y$ -axis.

$$g(x) = \underline{\hspace{2cm}}$$

3)  $f(x) = 14x - 3$  ; reflection across the  $x$ -axis.

$$g(x) = \underline{\hspace{2cm}}$$

4)  $f(x) = 2x + 8$  ; reflection across the  $y$ -axis.

$$g(x) = \underline{\hspace{2cm}}$$

5)  $f(x) = -9x + 15$  ; reflection across the  $x$ -axis.

$$g(x) = \underline{\hspace{2cm}}$$

6)  $f(x) = x - 2$  ; reflection across the  $y$ -axis.

$$g(x) = \underline{\hspace{2cm}}$$