

Transformations Review

Name: _____

Date: _____ Period: _____

1. Given $A(2, -6)$ and $B(0, 0)$, find

(a) length of \overline{AB} _____

(b) slope of \overline{AB} _____

- | | | |
|---------------------------------|------------------------|--------------------------|
| A. translation | E. 180-degree rotation | I. horizontal stretching |
| B. reflection across the x-axis | F. 270-degree rotation | J. horizontal shrinking |
| C. reflection across the y-axis | G. vertical stretching | K. expansion |
| D. 90-degree rotation | H. vertical shrinking | L. contraction |

For each of the transformations described in column 1, answer the questions in row 1. Show work on another sheet of paper.

	Letter from list above that corresponds.	Image of $A(2, -6)$ and $B(0, 0)$	Describe any fixed points.	Length of $\overline{A'B'}$. Is distance preserved?	Slope of $\overline{A'B'}$. Are \overline{AB} and $\overline{A'B'}$ \parallel , \perp , or neither?	Would an image triangle under this transformation be the same size and/or shape as a preimage triangle?
2. $(x, y) \rightarrow (x+3, y)$						
3. $x' = 3x, y' = y$						
4. $(x, y) \rightarrow (-x, -y)$						
5. $(x, y) \rightarrow (x, -y)$						
6. $x' = 2x, y' = 2y$						
7. $x' = x - 5, y' = y + 2$						
8. $x' = -y, y' = x$						
9. $(x, y) \rightarrow (y, -x)$						
10. $x' = -x, y' = y$						
11. $x' = 0.5x, y' = 0.5y$						
12. $(x, y) \rightarrow (x, 4y)$						

	Letter from list below that corresponds.	Image of $A(2, -6)$ and $B(0, 0)$	Describe any fixed points.	Length of $\overline{A'B'}$. Is distance preserved?	Slope of $\overline{A'B'}$. Are \overline{AB} and $\overline{A'B'}$ \parallel , \perp , or neither?	Would an image triangle under this transformation be the same size and/or shape as a preimage triangle?
13. $x' = \frac{1}{4}x$, $y' = y$						
14. $(x, y) \rightarrow (x, \frac{1}{3}y)$						
15. $x' = 2x + 2$ $y' = 3y - 1$						

- | | | |
|---------------------------------|------------------------|--------------------------|
| A. translation | E. 180-degree rotation | I. horizontal stretching |
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| D. 90-degree rotation | H. vertical shrinking | L. contraction |

16. Which of the transformations A-L and #2-15 have NO fixed points?

17. Triangle KMP lies entirely in quadrant I. In which quadrant will its image lie after each of these:

- | | |
|---------------------------------|---------------------------------------|
| b) reflection across the x-axis | c) reflection across the y-axis |
| d) 90-degree rotation | e) 180-degree rotation |
| f) 270-degree rotation | k) expansion |
| l) contraction | m) reflection across the line $y = x$ |

18. Vocabulary:

A transformation in which the pre-image and image are congruent is a(n) _____.

A transformation in which the size is different but the shape is preserved is a(n) _____.

A composition of two reflections across two parallel lines is a(n) _____.

A composition of two reflections across two intersecting lines is a(n) _____.

19. Using the graph to the right,

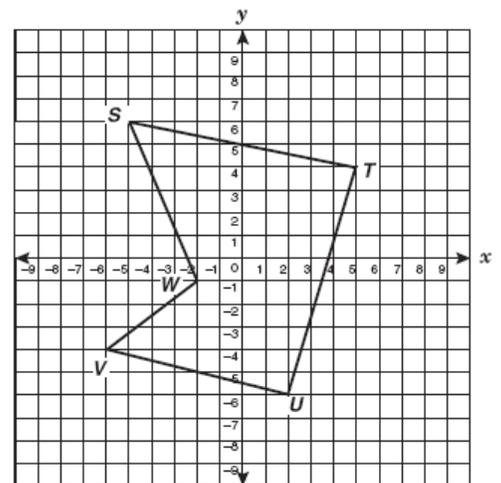
_____ Find the translation rule that maps T onto $T'(4,6)$.

_____ Find the image of S after reflecting across the y-axis.

_____ Find the image of W after reflecting across the x-axis.

_____ Find the image of V after a 90° counterclockwise rotation.

_____ Find the image of U after dilating by a scale factor of $\frac{1}{3}$.



20. **A O P X Z C D W**

Which letters do not have reflectional symmetry? _____

Which letters have only 1 line of symmetry? _____

Which letters have 2 lines of symmetry? _____

Which letters do not have rotational symmetry? _____

Which letters have a 90° angle of rotation? _____

Which letters have a 180° angle of rotation? _____