

Name: _____

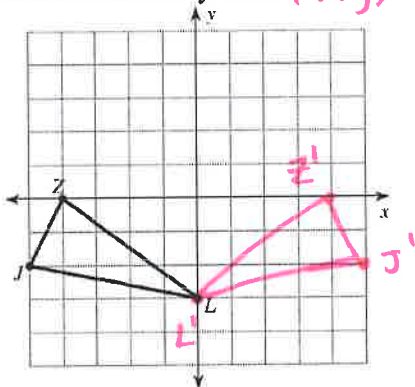
Key

Class: _____

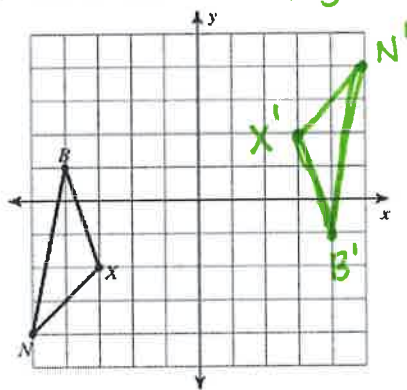
Math 2: Unit 6 Review Sheet

Part 1: Transformations

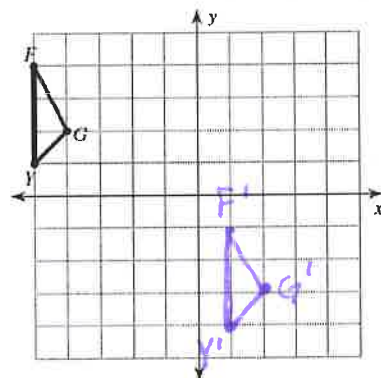
1. Reflect over the y axis $(-x, y)$



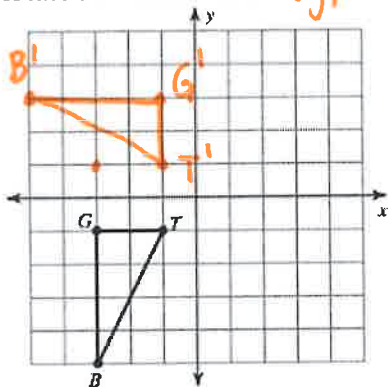
2. Rotate 180° $(-x, -y)$



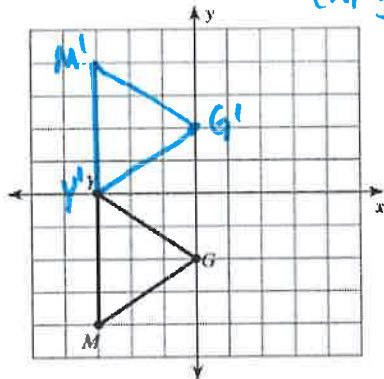
3. Translate $(x, y) \rightarrow (x + 6, y - 5)$



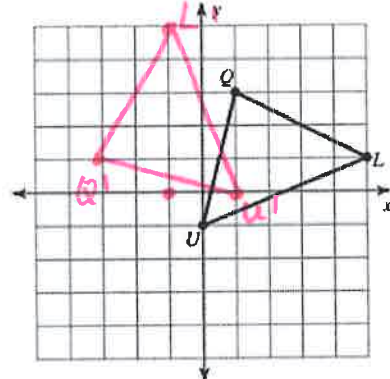
4. Rotate 90° clockwise $(y, -x)$



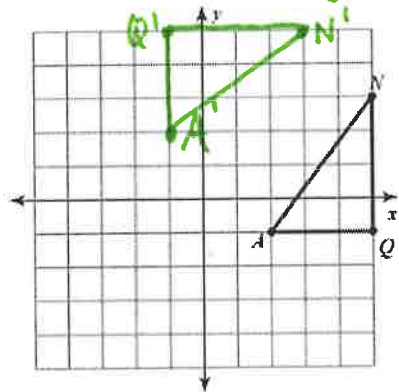
5. Reflect over the x axis $(x, -y)$



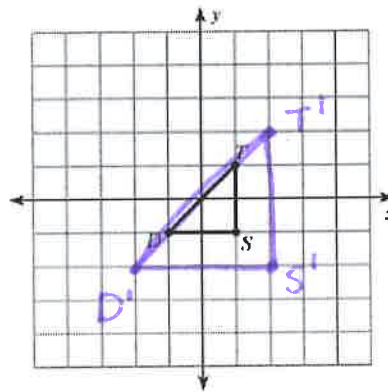
6. Rotate 90° counterclockwise $(-y, x)$



7. Reflect over $y = x$ (y, x)



8. Dilate $k = 2$



Part 2: Compositions of Transformations. Continue the transformation for each. Do not start over.

9. a. Start at $(0, 0)$...translate $(x, y) \rightarrow (x - 3, y + 9)$ $(-3, 9)$

b. Continue...reflect over the x axis $(-3, -9)$

c. Rotate 90° clockwise $(-9, 3)$

d. Dilate $k = 3$ $(-27, 9)$

e. Reflect over $y = x$ $(9, -27)$

f. Rotate 90° counterclockwise $(27, 9)$

g. Reflect over the y axis $(-27, 9)$

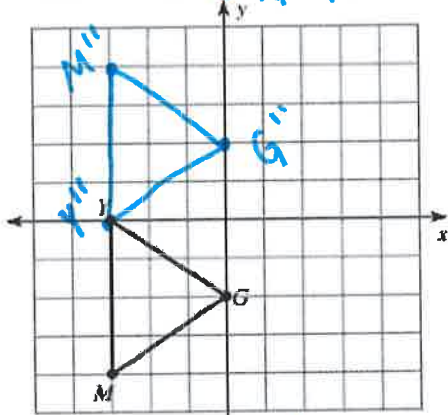
h. Translate $(x, y) \rightarrow (x - 1, y)$ $(-28, 9)$

i. Rotate 180° $(28, 9)$

Complete the composition of transformations. Be sure to label ALL points. Show work below if needed.

10. Reflect over the y axis $(-x, y)$

Rotate 180° $(-x, -y)$



pre-image $(-x, y)$ $(-x, -y)$

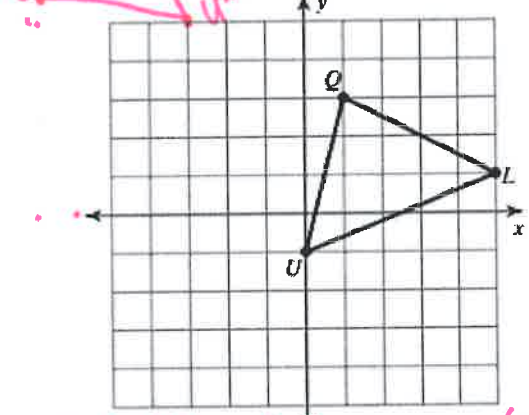
$Y(-3, 0) \rightarrow Y'(3, 0) \rightarrow Y''(-3, 0)$
 $M(-3, -4) \rightarrow M'(3, -4) \rightarrow M''(-3, 4)$
 $G(0, -2) \rightarrow G'(0, -2) \rightarrow G''(0, 2)$

Part 3: Use the rules to find the new image points, using the 3 preimage points below. Do not continue the transformations.

U(8, 2) G(-6, -1) A(7, -3)

11. Rotate 270° clockwise $(-y, x)$

Translate $(x, y) \rightarrow (x - 4, y + 5)$



pre-image $(-y, x)$ $(x - 4, y + 5)$

$Q(1, 3) \rightarrow Q'(-3, 1) \rightarrow Q''(-7, 6)$
 $U(0, -1) \rightarrow U'(1, 0) \rightarrow U''(-3, 5)$
 $L(5, 1) \rightarrow L'(-1, 5) \rightarrow L''(-5, 10)$

12. Rotate 90° counterclockwise $(-y, x)$

$U'(-2, 8) \quad G'(1, -6) \quad A'(3, 7)$

13. Reflect over $y = x$ (y, x)

$U'(2, 8) \quad G'(-1, -6) \quad A'(-3, 7)$

14. Reflect over the x axis $(x, -y)$

$U'(8, -2) \quad G'(-6, 1) \quad A'(7, 3)$

15. Rotate 180° $(-x, -y)$

$U'(-8, -2) \quad G'(6, 1) \quad A'(-7, 3)$

16. Translate $(x, y) \rightarrow (x - 5, y + 10)$

$U'(3, 12) \quad G'(-11, 9) \quad A'(2, 7)$

17. Dilate $k = 3$

$U'(24, 6) \quad G'(-18, -3) \quad A'(21, 9)$

Part 4: Backwards!

18. $A'(5, 3)$ was translated using $(x, y) \rightarrow (x + 1, y - 2)$. Find A. $A(4, 5)$

19. $B'(0, 3)$ was reflected over the x axis. Find B. $B(0, -3)$

20. $C'(-10, 4)$ was rotated 180 degrees. Find C. $C(10, -4)$

21. $D'(8, 7)$ was dilated using $k = \frac{1}{2}$. Find D. $D(16, 14)$

22. $E'(-5, -1)$ was translated using $(x, y) \rightarrow (x, y - 5)$. Find E. $E(-5, 4)$

23. $F'(-2, 8)$ was reflected over $y = x$. Find F. $F(8, -2)$