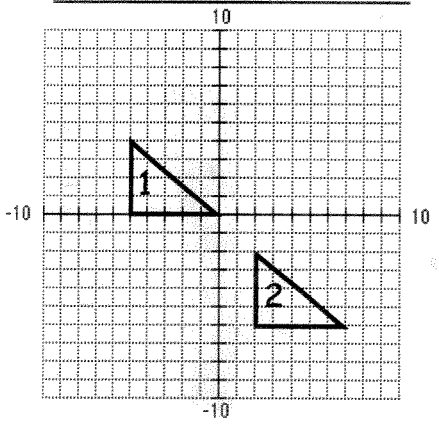
Unit 8 Test Review

Name Master 6

Date _____ Block _____

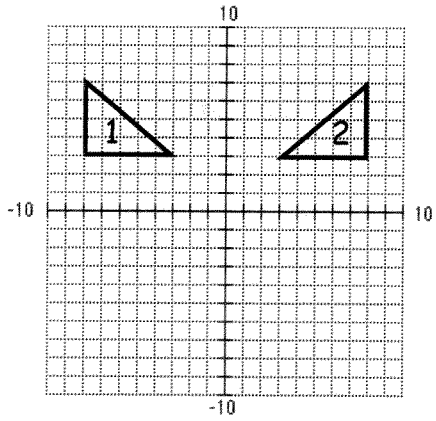
Classify the transformation from △1 to △2 as a reflection, rotation, or translation. Then write the formula in function notation underneath each diagram.

1. Translation



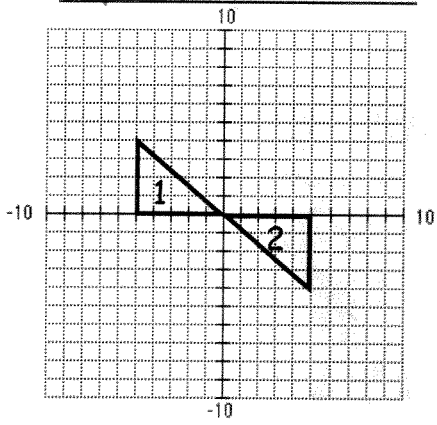
$f(x, y) \rightarrow (x+7, y-6)$

2. Reflection



$f(x, y) \rightarrow (-x, y)$

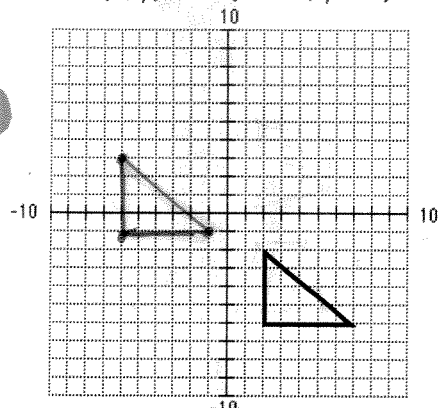
3. Rotation



$f(x, y) \rightarrow (-x, -y)$

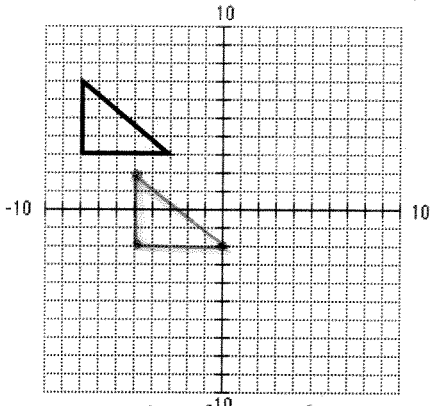
Draw the translation described. Then write the translation in vector form underneath each diagram.

4. $f(x, y) \rightarrow (x - 8, y + 5)$



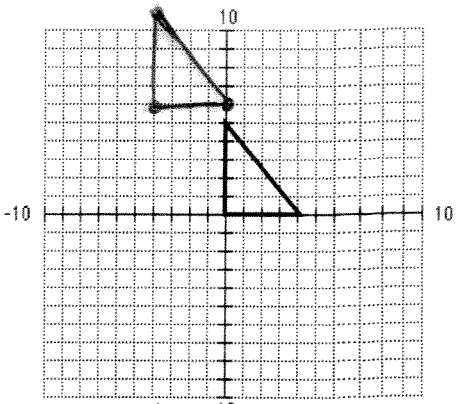
$\langle -8, 5 \rangle$

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



$\langle +3, -5 \rangle$

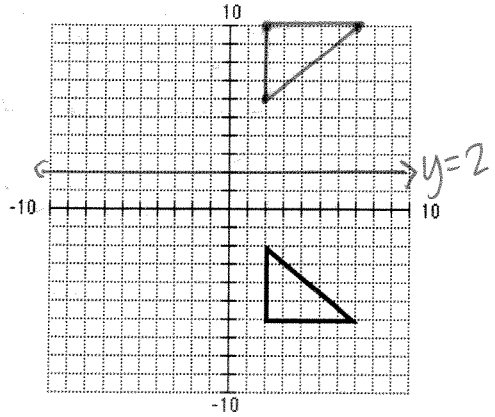
6. $f(x, y) \rightarrow (x - 4, y + 6)$



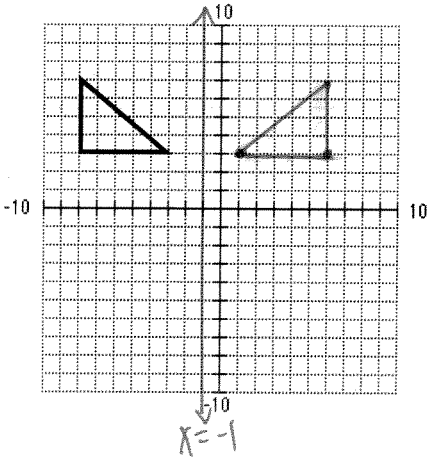
$\langle -4, 6 \rangle$

Draw the reflection described.

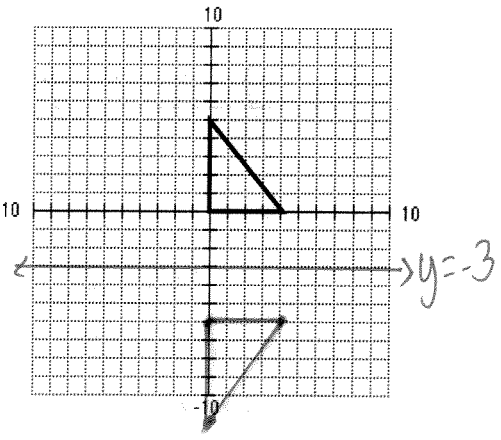
7. Reflect in the line $y = 2$



8. Reflect in the line $x = -1$

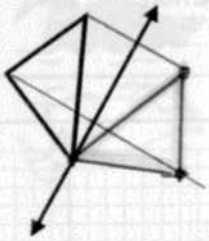


9. Reflect in the line $y = -3$

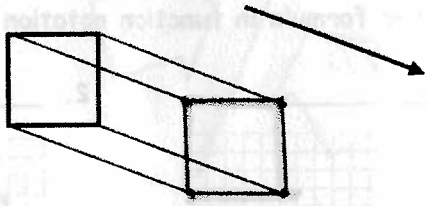


Use a ruler to draw the following.

10. Draw a reflection of the triangle in the given line of symmetry.



11. Draw the translation of the square along the translation vector.

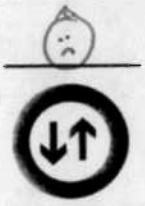


Determine how many lines of symmetry each sign has.

12. 2

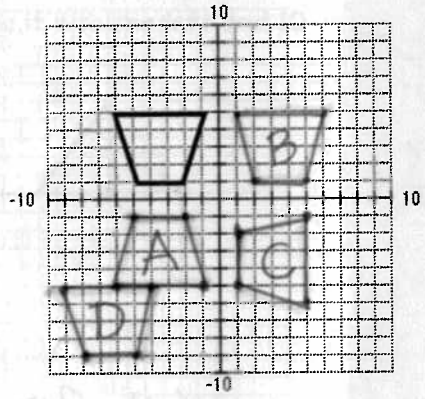
13. 1

14. 2

15. 

Draw and label each transformation to the trapezoid.

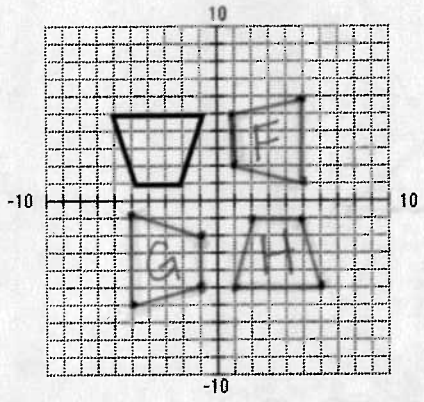
16. Reflect it in the x-axis: label it figure A. $(x,-y)$
17. Reflect it in the y-axis: label it figure B. $(-x,y)$
18. Reflect it in the y = x axis: label it figure C. (y,x)
19. Move it 3 to the left and 10 down: label it figure D. $(x-3,y-10)$



Draw and label each rotation to the trapezoid.

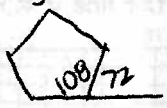
20. Rotate it 90° clockwise: label it figure F. $(y,-x)$
21. Rotate it 90° counterclockwise: label it figure G. $(-y,x)$
22. Rotate it 180° clockwise: label it figure H. $(-x,-y)$

$(-2,1)$
$(-5,1)$
$(-6,5)$
$(-1,5)$



Will the given polygon tessellate the plane? (Yes/No) Try and draw a tessellation to test your answer.

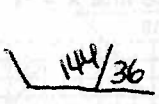
23. Regular Pentagon



$\frac{360}{108} = 3.3$

No

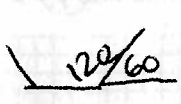
24. Regular Decagon



$\frac{360}{144} = 2.5$

No

25. Regular Hexagon



$\frac{360}{120} = 3$

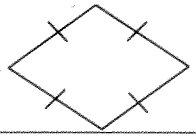
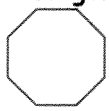
Yes

26. How can you determine if a polygon will tessellate a plane? Find the measure of the interior angle and see if it is a factor of 360°

27. Name 3 regular polygons that will tessellate a plane.

triangle, square, & hexagon

Fill in the chart with the answers to the questions pertaining to each figure given.

	Line Symmetry? YES or NO	If YES, how many lines of symmetry?	Point Symmetry? YES or NO	Rotational Symmetry? YES or NO	If YES, what is the order?	If YES, what is the magnitude?
28. Regular Pentagon 	Yes	5	No	Yes	5	72°
29. Rhombus 	Yes	2	Yes	Yes	2	180°
30. Regular Octagon 	Yes	8	Yes	Yes	8	45°
31. Rectangle 	Yes	2	Yes	yes	2	180°
32. Regular Triangle 	Yes	3	No	yes	3	120°

Sketch the following: A polygon that has . . .

33. line symmetry but not rotational symmetry

34. line symmetry and rotational symmetry

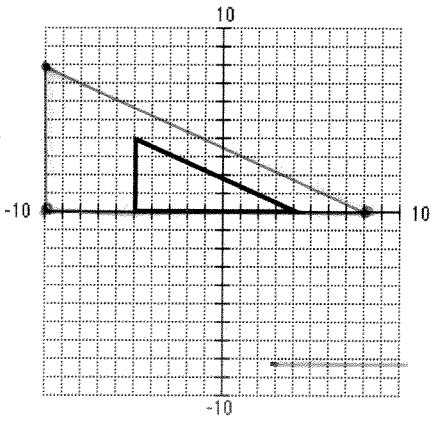
regular hexagon

35. point symmetry but not rotational symmetry

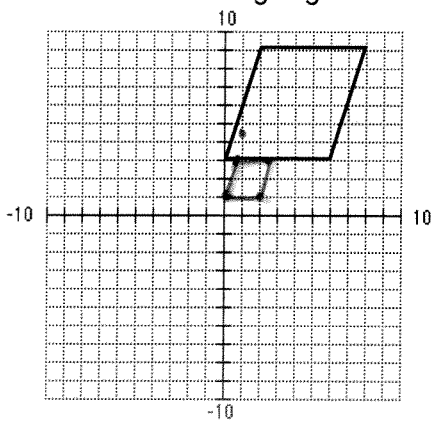
No such shape!

Draw a dilation of the given image according to the formula below.

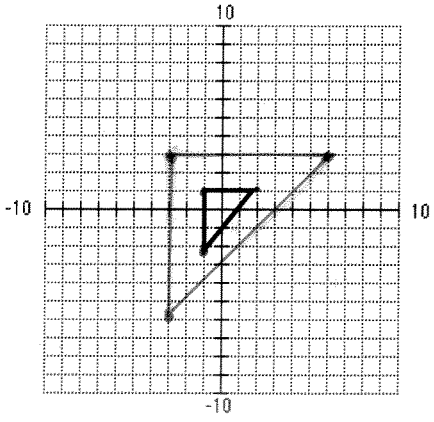
36. $f(x, y) \rightarrow (2x, 2y)$



37. $f(x, y) \rightarrow (\frac{1}{3}x, \frac{1}{3}y)$

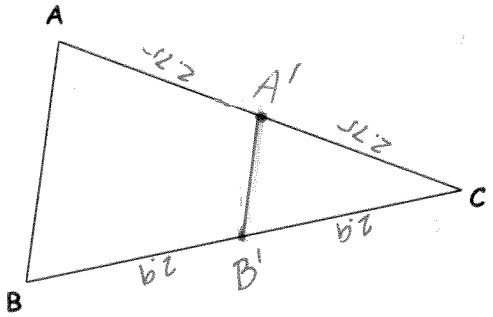


38. $f(x, y) \rightarrow (3x, 3y)$

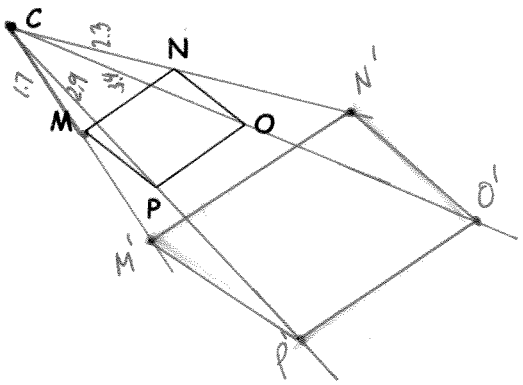


Draw a dilation image of each figure with center C and the given scale factor. Then describe each transformation as an enlargement or a reduction.

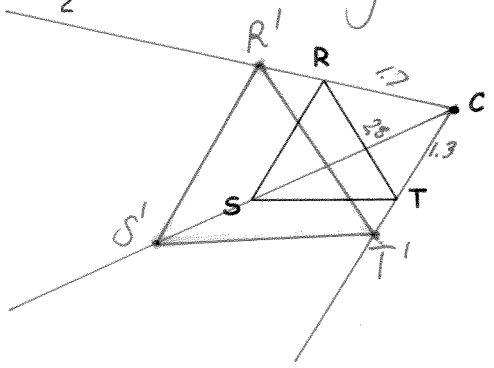
39. k = .5 Reduction



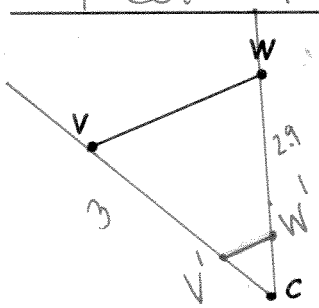
40. k = 2 Enlargement



41. k = $\frac{3}{2}$ Enlargement



42. k = $\frac{1}{4}$ Reduction



define

Know the following terms:	Summarize the formulas you have learned: f(x,y) →
• Isometry preserves distance	• A reflection in the x-axis $(x,-y)$
• Pre-Image original shape	• A reflection in the y-axis $(-x,y)$
• Image result of transformation	• A reflection in the y = x axis (y,x)
• Magnitude ∠ of rotation	• A 90° clockwise rotation ↷ $(y,-x)$
• Order - # of times it rotates	• A 90° counterclockwise rotation ↶ $(-y,x)$
• Scale factor ratio of corr. sides	• A 180° clockwise rotation $(-x,-y)$
• Line symmetry cuts in half	• A 180° counterclockwise rotation $(-x,-y)$
• Rotational Symmetry Rotates 0-360°	• A 270° clockwise rotation $(-y,x)$
• Point Symmetry Rotates 180°	• A 270° counterclockwise rotation $(y,-x)$
• Function Notation $f(x,y) \rightarrow (\ ,\ )$	
• Vector Notation $\langle\ \ \rangle$	
• Tessellation - no gaps! - It will tessellate if an interior ∠ is a factor of 360°	