

Transformations Review

Lesson 7

Combined Transformations for a given point:

Ex. 1 The graph of $y = |x|$ is transformed to,

$$y = 2|x + 5| + 7$$

What happens to the general point (x, y) ?

$$(x, y) \rightarrow (\quad , \quad)$$

so, what happens to the specific point $(-5, 5)$?

$$(-5, 5) \rightarrow (\quad , \quad) \rightarrow (\quad , \quad)$$

Example 2: The graph of $y = \sqrt{x}$ undergoes the transformation, $y = 3\sqrt{x-4} - 2$

So (x, y) becomes (\quad , \quad)

So $(4, 2)$ would become (\quad , \quad)

$\rightarrow (\quad , \quad)$

Example 3: If $y = f(x)$ is transformed to $y = -\frac{1}{2}f(x-8) + 3$

(x, y) becomes (\quad , \quad)

Your Turn: If $y = \sqrt{x}$ is transformed to $y = \left(\frac{1}{2}x\right)^2 + 3$

(x, y) becomes (,)

So $(1, 1)$ would become (,)

\rightarrow (,)

Try: If $(-8, 4)$ is on the graph of $y = -3f[2(x+6)] + 7$

then what point, (x, y) , was on the original?

(x, y) became (,)

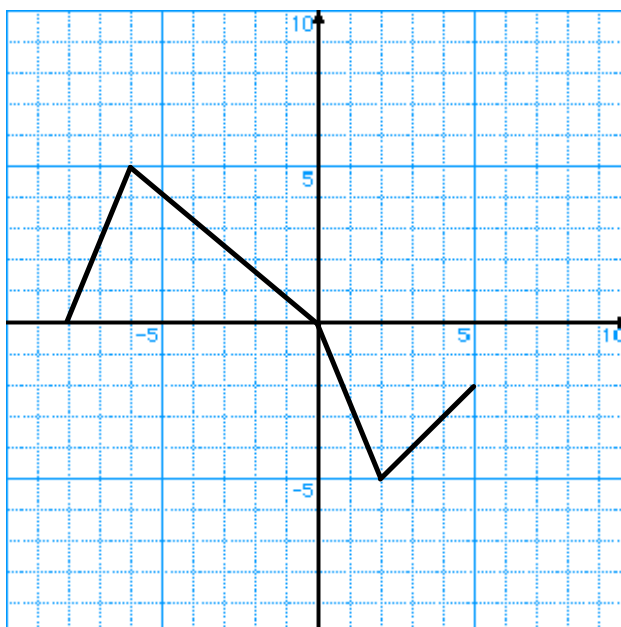
Review Practice:

1. Describe the transformations of the following compared to $y = f(x)$
Give the coordinates of the point $(3, -6)$ after the transformations.

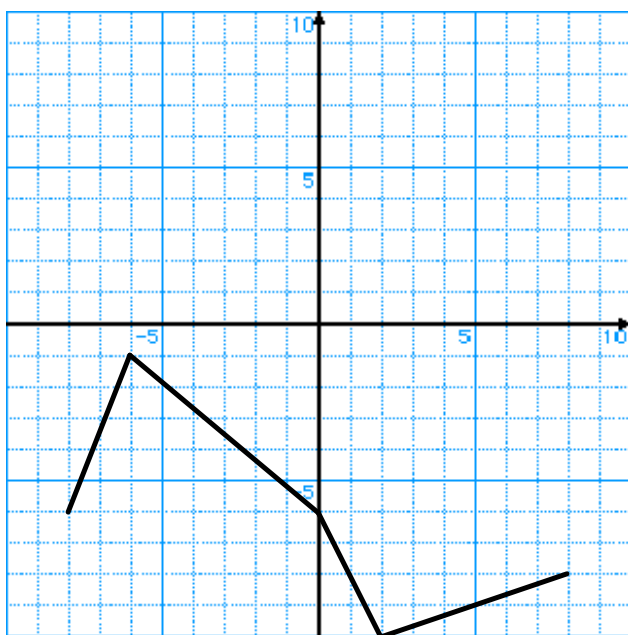
Function	Describe the transformation clearly	Coordinates of the point after transformation
$y = f(-x)$		
$y = \frac{1}{2}f(x)$		
$y = f(x - 4)$		
$y = f(3x)$		
$y = -f(x)$		
$y = f(x) + 5$		
$y = f^{-1}(x)$		

2. Given the function $y = 3f[-2(x+4)] - 5$, describe clearly the transformations that $y = f(x)$ has undergone.
3. The graph of $y = x^2$ is stretched horizontally by a factor of $\frac{1}{2}$, reflected in the x-axis, and moved 5 units left and 4 units down. Write the equation of the transformed function.

4. The graph of $y = f(x)$ is given. On the same grid, show the graph of $y = -2f(x+3) - 2$



5. The partial graph of $y = f(x)$ is shown below. If the graph below is stretched horizontally about the line $x = 2$, by a factor of $\frac{1}{2}$, then draw the new graph and state an invariant point of the graph.



invariant point: (,)

Homework

1. Review: Text Pages 56/57, Exercises # 1 - 17.

2. Practice Test: Text Pages 58/59, Exercises # 1 - 15.



Attachments

Reflections Assignment 1.doc

Transformations Quiz 2a.doc