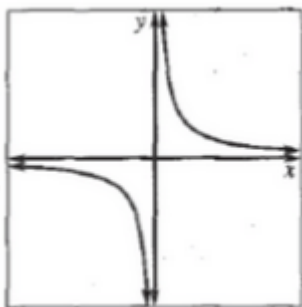


PreCalc 12 Chapter 1 Assignment – hand in for completion marks

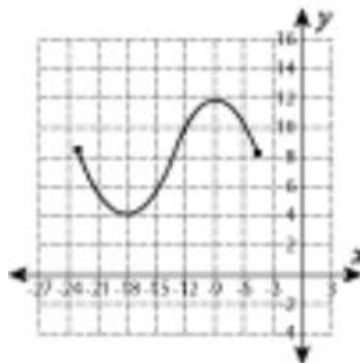
Name: _____

1. For each graph below, state whether or not it is a function. (Yes/No)

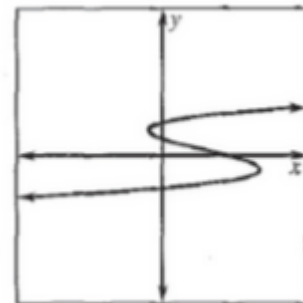
a)



b)



c)



2. State the domain for each of the following functions. Give the domain in set notation.

a) $f(x) = \frac{5x}{2x-1}$

b) $f(x) = \sqrt{3x+4}$

3. State what happens to the graph of the function with equation $y = f(x)$ when the equation is changed to each of the following:

a) $y = f(x-8)$

b) $y-2 = f(x)$

c) $y = 3f(x)$

d) $y = f(4x)$

e) $5y = f(x)$

f) $y = f\left(\frac{1}{2}x\right)$

g) $y = -f(x)$

h) $y = f(-x)$

i) $-y = f(x)$

4. For each of the following, write the mapping notation that shows where points on $y = f(x)$ go to:

a) $y = -2f\left(\frac{1}{3}(x-5)\right) - 7$

b) $y = 2f(-4x+12) + 9$

5. Given each mapping notation, write the new function equation that $y = f(x)$ will change into.

a) $(x, y) \rightarrow (4x, y+8)$

b) $(x, y) \rightarrow (-x-5, y-2)$

6. The base function $y = \sqrt{x}$ contains the point $(4, 2)$.

For each part below

- Write the new equation that results when $y = \sqrt{x}$ is transformed as described
- Give the new image point for $(4, 2)$. (*Where does $(4, 2)$ get mapped to?*)

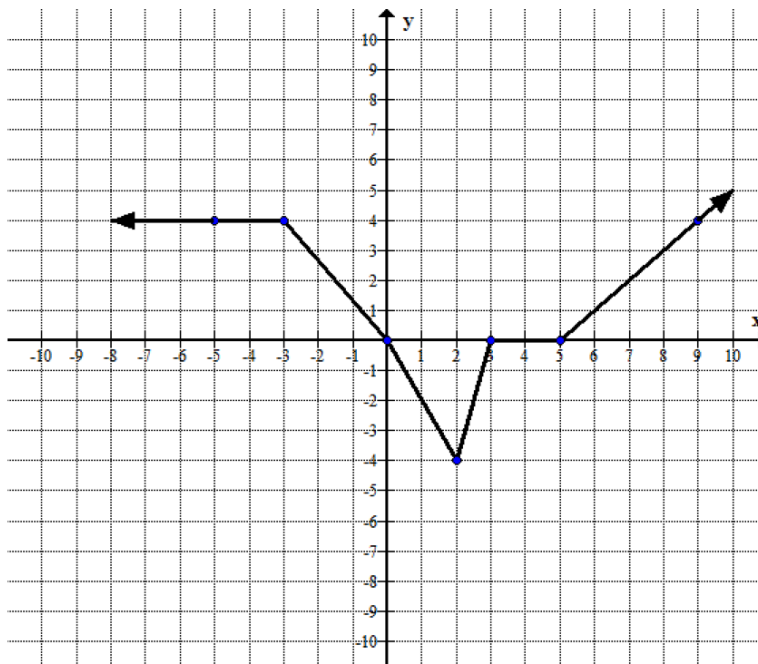
a) $y = f(x-4) + 9$

b) base function, $y = \sqrt{x}$, is translated 8 units down and translated 3 units left

7. Given the function $y = f(x)$ below

a) Fill in the table of key points for the original function, then create the table of values for the transformed graph, $y = f(x+2) - 4$ and sketch it on the same grid.

x	y



b) State the domain and range of the TRANSFORMED GRAPH, using set notation.

8. Write the new equation that results when $y = f(x)$ is transformed as listed below:

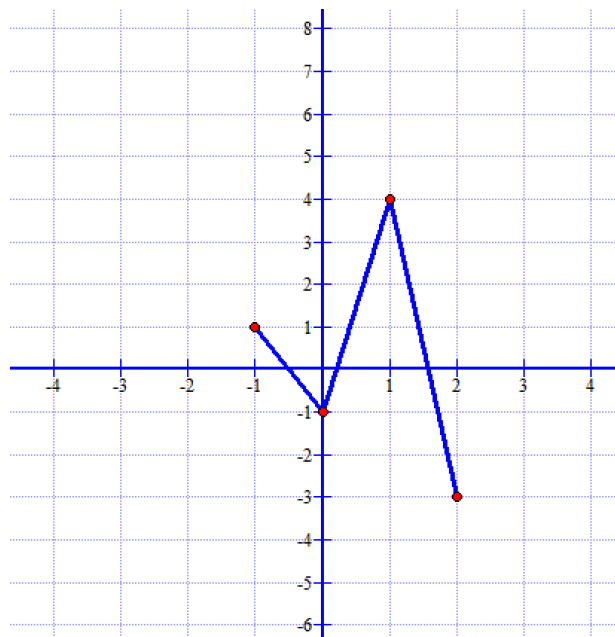
a) Reflected across the x-axis, vertically compressed by a factor of $\frac{1}{4}$, horizontally expanded by a factor of 3, and translated 2 units left and 4 units down.

b) Reflected across the y-axis, vertically expanded by a factor of 5, horizontally compressed by a factor of $\frac{1}{2}$, and translated 6 units right and 2 units up.

9. Shown on the grid is the graph of $y = f(x)$. Consider the equation $y = 2f(-x+2) - 1$

- Write the mapping.
- Fill in the tables showing 4 key points on the original graph along with their final image points after the transformations are done.

x	y



- Sketch the graph of $y = 2f(-x+2) - 1$ on the grid.

9. Given that $y = f(x)$ contains the point $(-6, 12)$, find its image point after each of the following transformations.

a) $y = 2f\left(-\frac{1}{3}x\right)$

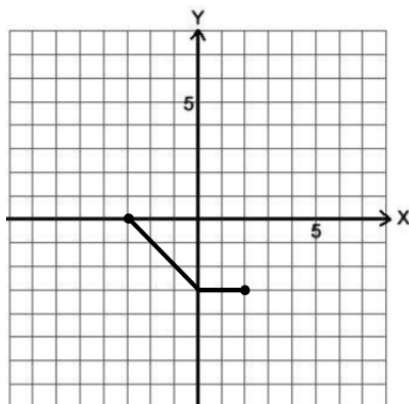
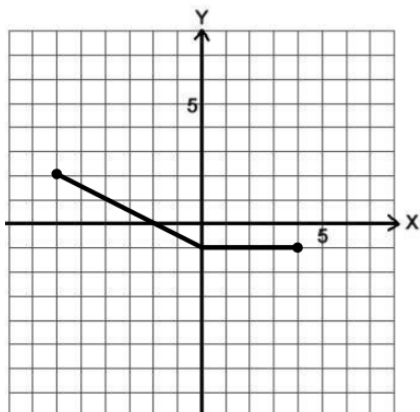
b) $y = -\frac{1}{2}f(x) + 6$

c) $y = -f(2(x+4)) - 1$

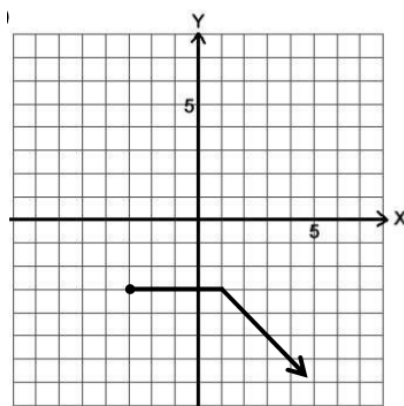
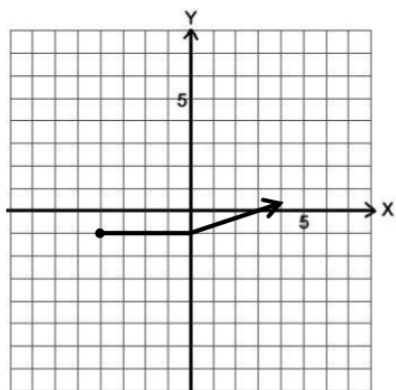
d) $y = 2f(-3x-15) + 7$

10. Given that the graph of the function $y = f(x)$ is shown on the left, determine the equation of the function on the right.

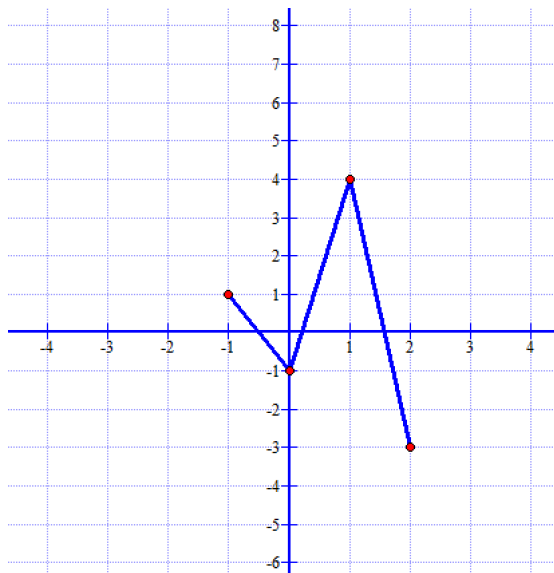
a)



b)



11. Graph the inverse of the function shown below. Fill in the tables showing the original's key points, and the inverse's key points.



x	y

12. Determine the equation of the inverse for each of the following. Show the process clearly.

a) $y = 4x - 3$

b) $y = \sqrt{2x - 10} + 3$

c) $y = \frac{4x}{5x - 8}$