Unit 1 Review
Sec Math 3

Name:_____
Date: _____ Class: _____

1. Name the parent function, then describe the following transformations in words.

a) $x - 4$ b) $x^2 + 5$ c) $|-x|$ d) $3\sqrt[3]{x}$

e) $\frac{1}{4} \bullet 2^x$ f) $\sqrt{2x}$ g) $-x^3$ h) $(x+1)^2$

2. Fill in each blank with the parent function that corresponds to each of the graphs given below.

_____ A)

_____ B)

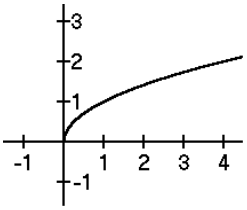
_____ C)

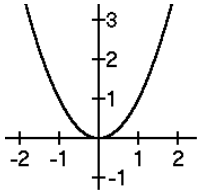
_____ D)

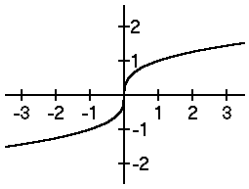
_____ E)

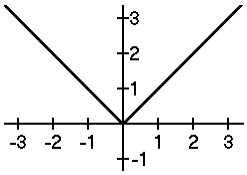
_____ F)

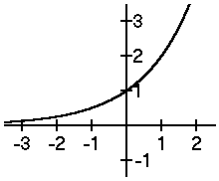
_____ G)

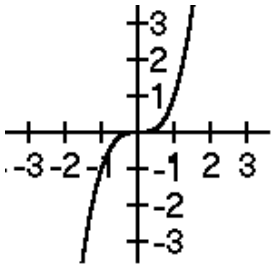
A)


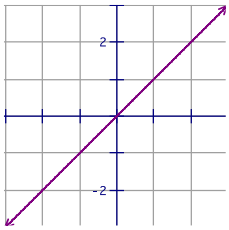
B)


C)


D)


E)


F)


G)


List the attributes for the following parent functions. (Hint: You may want to draw a sketch of the graph)

3. $y = (x+4)^2 - 1$

Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Left EB: _____

Right EB: _____

4. $y = \sqrt{x-2} + 3$

Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Left EB: _____

Right EB: _____

Given the parent function $f(x)$, write the equation that contains the given transformations.

5. $f(x) = \sqrt[3]{x}$

- Vertical Translation down two units
- Reflection across the y-axis (H. flip)

$f(x) =$ _____

6. $f(x) = |x|$

- Horizontal Translation right two units
- Reflection across the x-axis (V. Flip)

$f(x) =$ _____

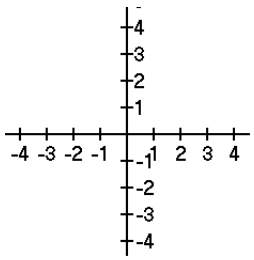
7. $f(x) = 2^x$

- Vertical Compression by a factor of 2
- Horizontal Translation left 3 units

$f(x) =$ _____

Graph the following functions **without** using a calculator. Next, identify the parent function, list the transformations involved, and also include the new domain and range.

8. $g(x) = \sqrt{x+1} - 2$



Parent Function: _____

List the transformations in words:

a) _____

b) _____

Domain: _____

Range: _____

x-int: _____

y-int: _____

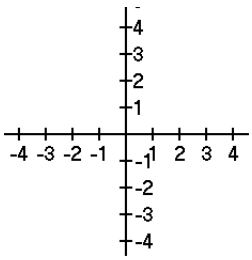
Left EB: _____

Right EB: _____

Inc: _____

Dec: _____

9. $h(x) = 2(x-3)^2 + 1$



Parent Function: _____

List the transformations in words:

a) _____

b) _____

c) _____

Domain: _____

Range: _____

x-int: _____

y-int: _____

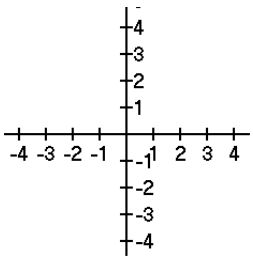
Left EB: _____

Right EB: _____

Inc: _____

Dec:_____

10. $i(x) = -2|x+1| - 1$



Parent Function: _____

List the transformations in words:

a) _____

b) _____

c) _____

d) _____

Domain: _____

Range: _____

x-int: _____

y-int: _____

Left EB: _____

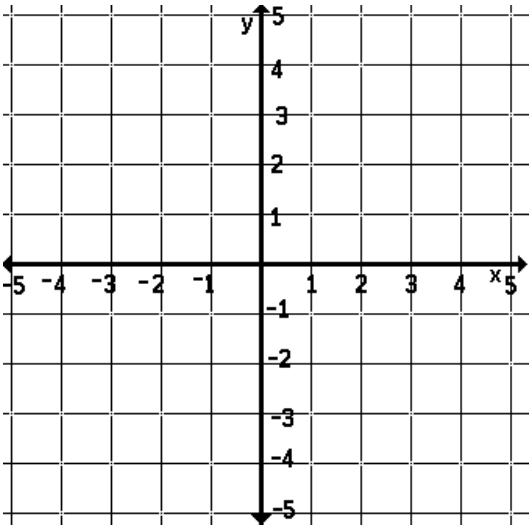
Right EB: _____

Inc: _____

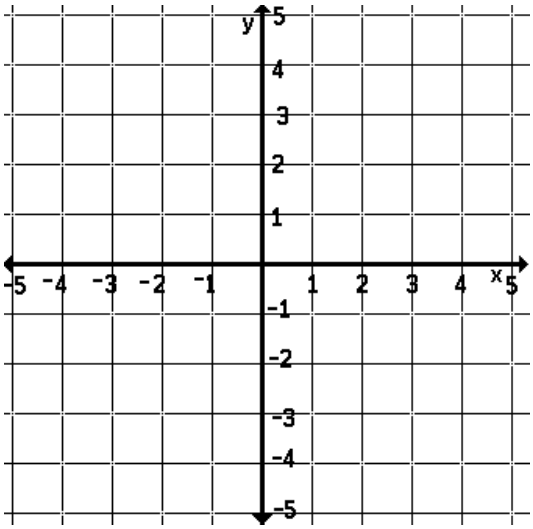
Dec: _____

Graph the piece-wise functions

11. $f(x) = \begin{cases} x+2, & -3 \le x < 0 \\ x^2 - 3, & x \ge 0 \end{cases}$

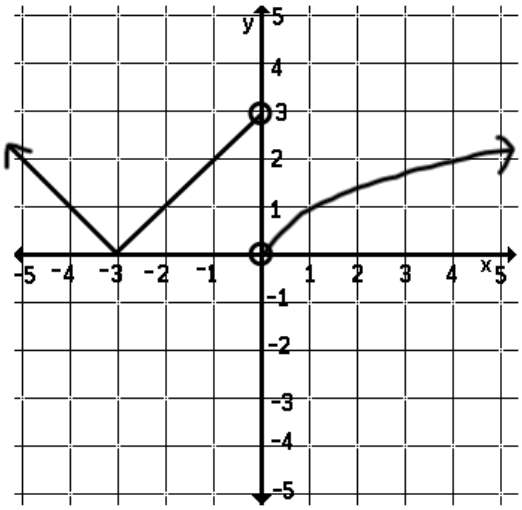


12. $f(x) = \begin{cases} (x+1)^2, & x \le -1 \\ \sqrt[3]{x}, & x > -1 \end{cases}$



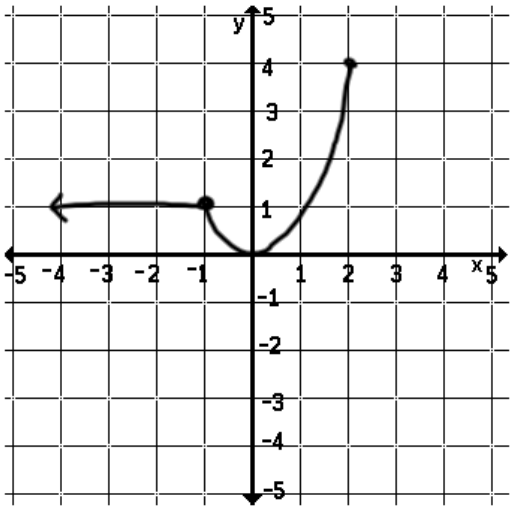
Write a function given the piecewise graphs. Be sure to include any domain restrictions!

13.



Function:

14.



Function: