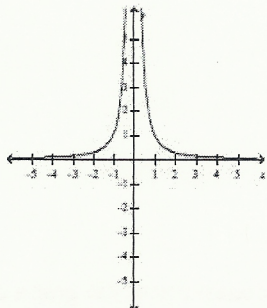


1-5: Parent Functions and Transformations Homework

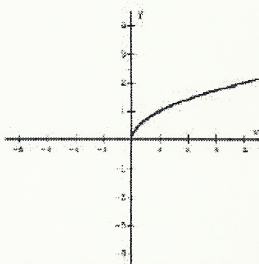
1. Identify the parent functions:

1.

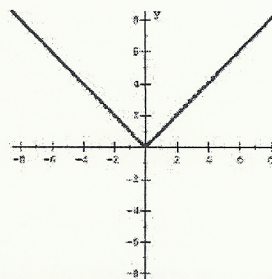
a.



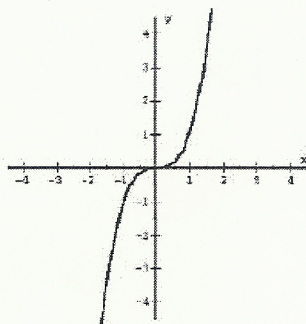
b.



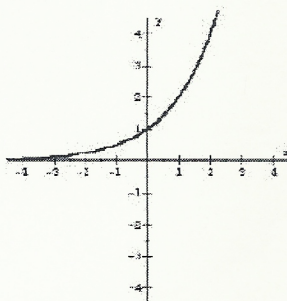
c.



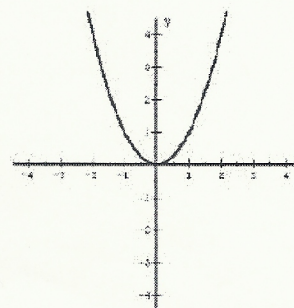
d.



e.



f.



2. For the following functions, name the parent function and describe the domain, range, symmetry, and whether the function is even, odd, or neither.

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

b. $f(x) = x^3$

c. $f(x) = \frac{1}{x}$

2

3. Identify the parent function of each:

a. $g(x) = -5[x - 2]$

b. $g(x) = \frac{\sqrt{x+3}}{4}$

c. $g(x) = \frac{4}{x+1}$

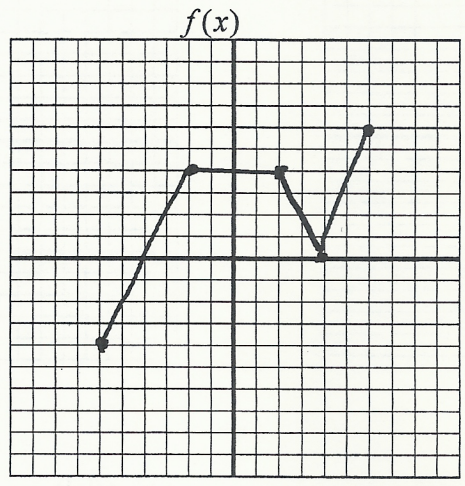
4. Using your graphing calculator, describe the asymptotes and point of discontinuity of the graph of the function

$$f(x) = \frac{1}{x^2 - 3x - 4}$$

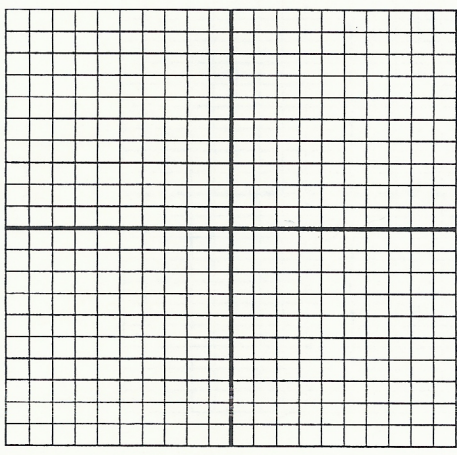
ADV PRECALCULUS
WS 1.5

NAME _____

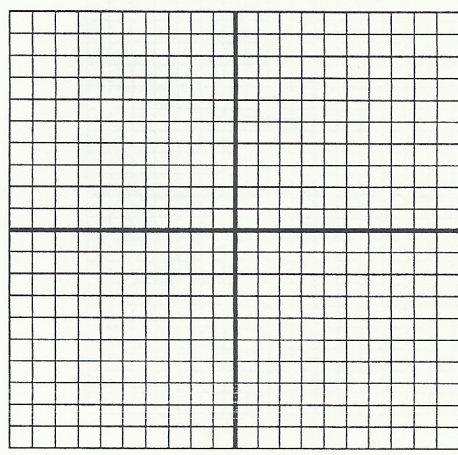
Given the graph of $f(x)$ as shown below, sketch the following transformations to the graph. Please label the vertices of your new graph.



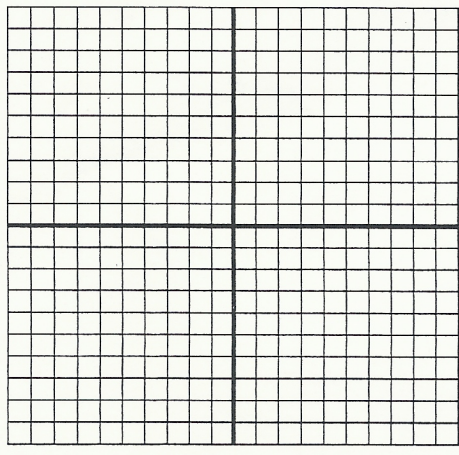
1.) $f(x-3)+2$



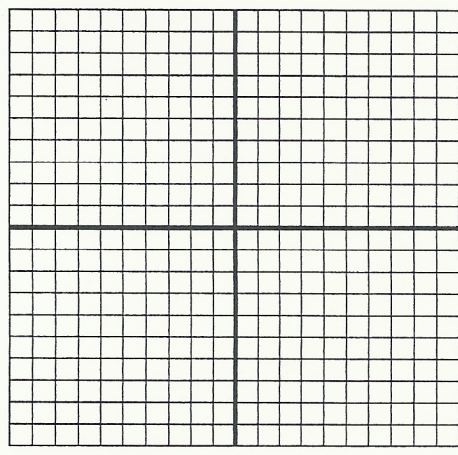
2.) $-f(x)$



3.) $f(-x)$

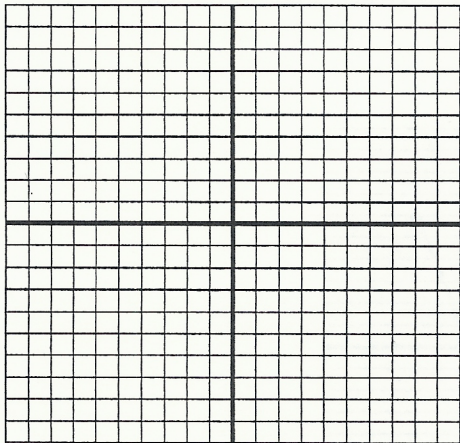


4.) $\frac{1}{2}f(2x)$

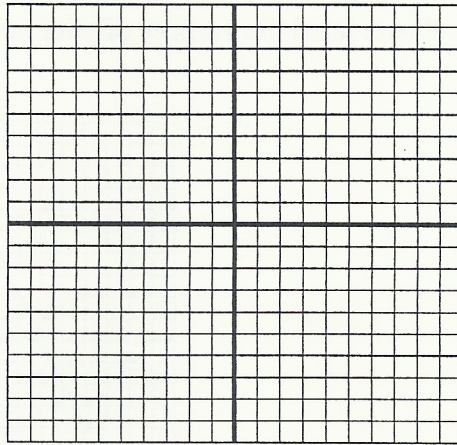


4

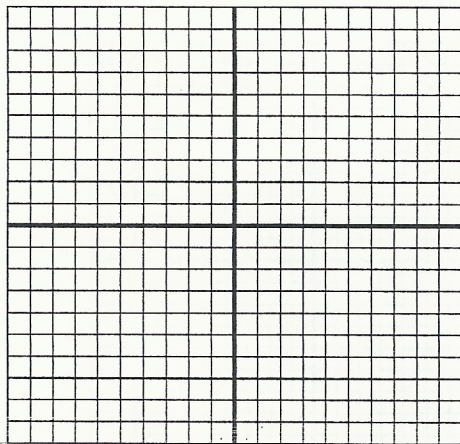
5.) $f\left(\frac{x}{2}\right) - 3$



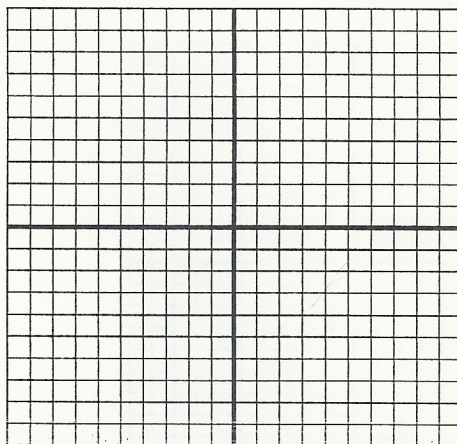
6.) $f(4 - 2x)$



7.) $|f(x)|$



8.) $f(|x|)$



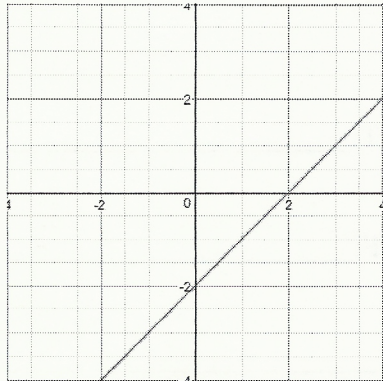
ADV PRECALCULUS

NAME _____

WS 1.5 HW #2

Given the following graphs, name the parent function, the transformation to that parent function, and the equation of the graph based on the transformation. Note: Only ONE transformation has been applied to each of the following functions.

1.)

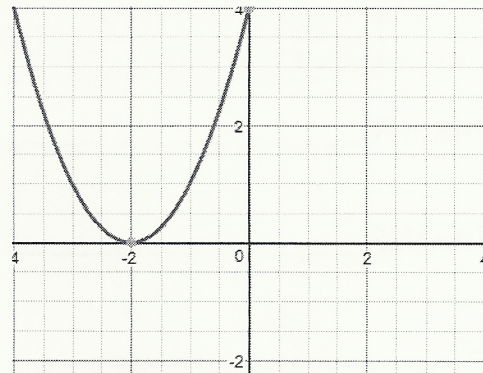


PARENT: _____

TRANSF: _____

EQ: _____

2.)

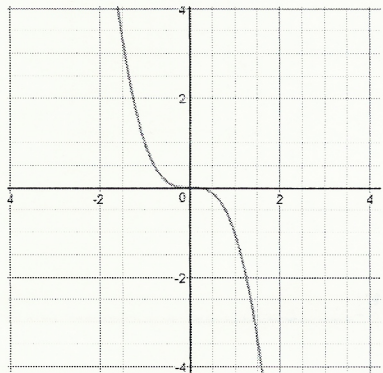


PARENT: _____

TRANSF: _____

EQ: _____

3.)

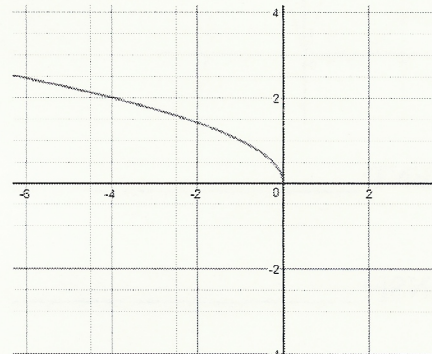


PARENT: _____

TRANSF: _____

EQ: _____

4.)

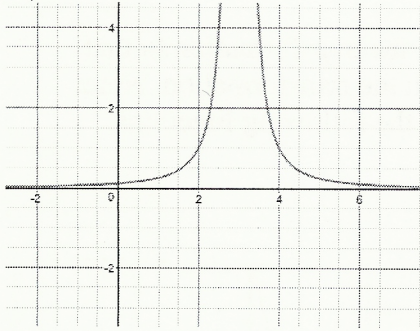


PARENT: _____

TRANSF: _____

EQ: _____

5.)

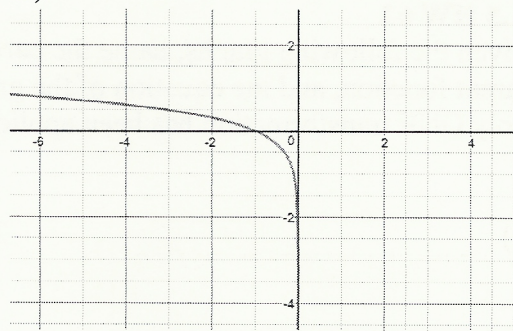


PARENT: _____

TRANSF: _____

EQ: _____

6.)

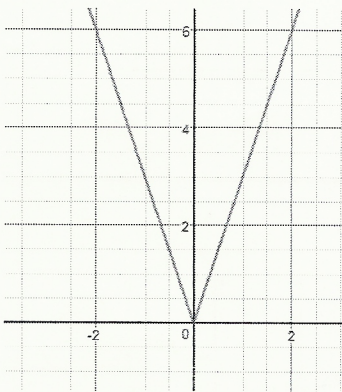


PARENT: _____

TRANSF: _____

EQ: _____

7.)

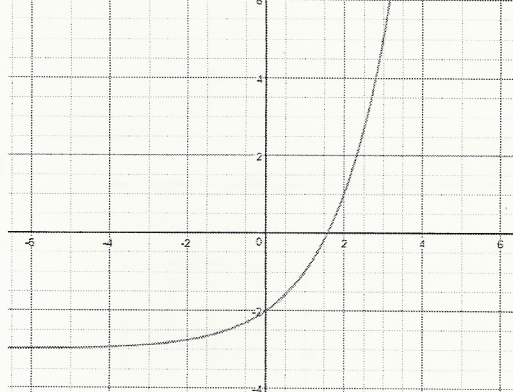


PARENT: _____

TRANSF: _____

EQ: _____

8.)

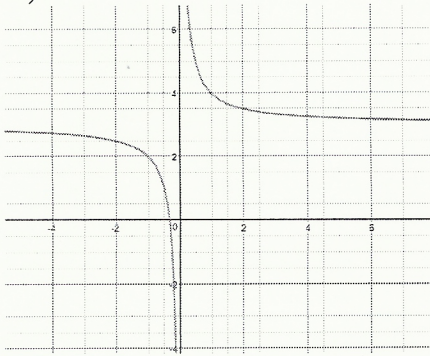


PARENT: _____

TRANSF: _____

EQ: _____

9.)

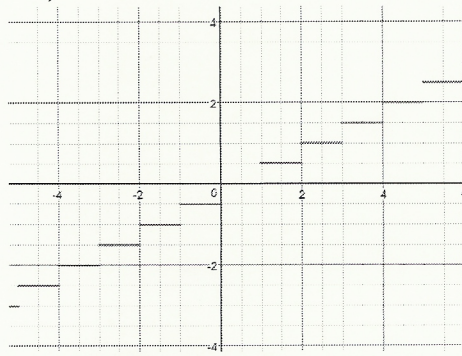


PARENT: _____

TRANSF: _____

EQ: _____

10.)



PARENT: _____

TRANSF: _____

EQ: _____

8

ADV PRECALC
1.5 WS 3

Name _____

Describe how the graph of $y = x^2$ can be transformed to the graph of the given equation.

1.) $y = x^2 - 3$ 2.) $y = x^2 + 5.2$ 3.) $y = (x+4)^2$ 4.) $y = 3x^2 + 2$

5.) $y = (5-x)^2$ 6.) $y = (2x)^2$ 7.) $y = (3-3x)^2 + 2$ 8.) $y = \frac{1}{2} \left(\frac{1}{3}x + 2 \right)^2$

Describe how the graph of $y = \sqrt{x}$ can be transformed to the graph of the given equation.

9.) $y = -2\sqrt{x}$ 10.) $y = \sqrt{3x}$ 11.) $y = \sqrt{3-x}$ 12.) $y = \frac{\sqrt{4-2x}}{2}$

Find the equation of the reflection of f across (a) the x -axis and (b) the y -axis.

13.) $f(x) = 2\sqrt{x+3}$

14.) $f(x) = x^3 - 5x^2 - 3x + 2$

15.) $f(x) = 3|x+5|$

16.) $f(x) = \log(2x)$

9

A function f is obtained from a graph of y by the sequence of transformations indicated. Write an equation whose graph is f .

17.) $y = x^2$; a vertical stretch by a factor of 3, then a shift right 4 units.

18.) $y = \sqrt{x}$; a reflection over the y -axis, a shift right 4 units, then a vertical shrink by a factor of 2.

19.) $y = |x|$; a reflection over the y -axis, a horizontal shrink by a factor of 3, and then a shift down 4 units.

20.) $y = \frac{1}{x}$; a vertical stretch by a factor of 5, a horizontal shrink by a factor of 2, followed by a shift up 2 units, and then a reflection over the x -axis