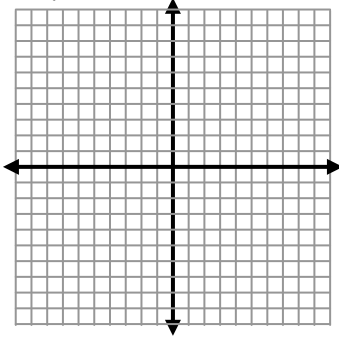


**Unit 1 Review Assignment:**

**Name:**

**Part A: Review Graphs of Functions** - Graph each of the following equations in the standard view window of your graphing calculator.

1.  $y = x$



Type of function:

Domain:

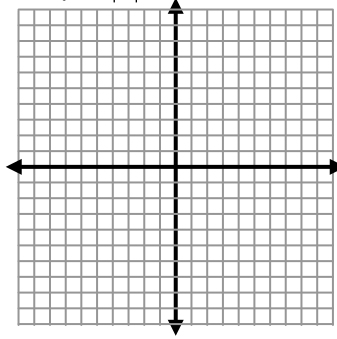
Range:

x-intercept(s):

Y-intercept(s):

Slope:

2.  $y = |x| + 1$



Type of function:

Domain:

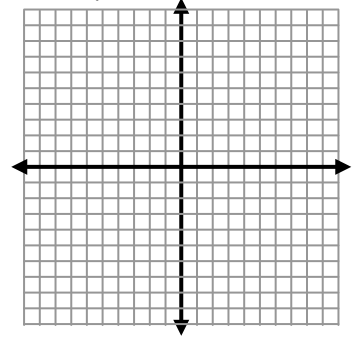
Range:

Coordinates of Vertex:

Y-intercept(s):

Equation of the axis of symmetry

3.  $y = x^2 - 2$



Type of function:

Domain:

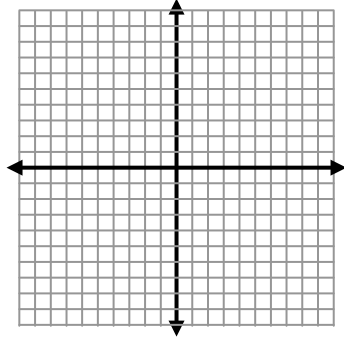
Range:

Vertex:

Y-intercept(s):

Axis of symmetry

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



Type of function:

Domain:

Range:

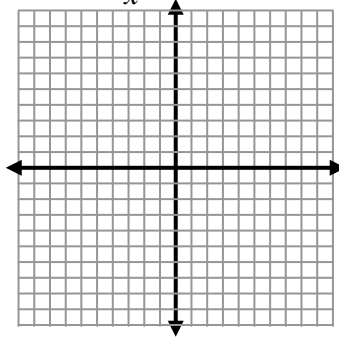
Zeros:

Y-intercept(s):

Relative Maximum:

Relative Minimum:

5.  $y = \frac{1}{x}$



Type of function:

Domain:

Range:

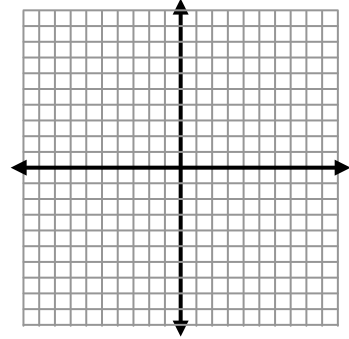
X-intercept(s):

Y-intercept(s):

Equation of Vertical Asymptote:

Equation of Vertical Asymptote:

6.  $y = \sqrt{x}$



Type of function:

Domain:

Range:

## Part B: Review Function Notation

1. If  $f(x) = x^3 - 5$ , find the following in simplest form:

a)  $f(-1)$       b)  $4f(x)$       c)  $f(4x)$       d)  $f(x)+5$       e)  $f(x+5)$       f)  $f(-x)$

2. If  $f(x) = \sqrt{x}$ , write the following in terms of the function  $f$ :

a)  $\sqrt{x}-1$       b)  $\sqrt{x+3}$       c)  $\sqrt{2x-1}$       d)  $-3\sqrt{x}$

3. If  $f(x) = x^2$ , write the following in terms of the function  $f$ :

a)  $x^2+3$       b)  $(x+3)^2$       c)  $3x^2$       d)  $(3x)^2$       e)  $4x^2-7$

f)  $4(x^2-7)$       g)  $-2x^2-1$       h)  $(-x+4)^2$       i)  $-3(-x-2)^2$

## Answer Key

1. a)  $-6$       b)  $4x^3 - 20$       c)  $64x^3 - 5$       d)  $x^3$       e)  $x^3 + 15x^2 + 75x + 120$       f)  $-x^3 - 5$   
2. a)  $f(x)-1$       b)  $f(x+3)$       c)  $f(2x-1)$       d)  $-3f(x)$   
3. a)  $f(x)+3$       b)  $f(x+3)$       c)  $3f(x)$       d)  $f(3x)$       e)  $4f(x)-7$       f)  $4(f(x)-7)$   
g)  $-2f(x)-1$       h)  $f(-x+4)$       i)  $-3f(-x-2)$