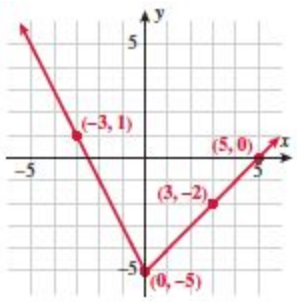
Pre-Calculus Chapter 1 Practice Test

1.) (2.5 pts each, 5 pts total) Use the graph of y = g(x) to answer the following:

a) g(3)

b) g(0)



2.) (5 pts each, 10 pts total) Evaluate the given quantities applying the following four functions:

$f(x) = 2x - 3$ $F(x) = 4 - x^2$ $g(x) = 5 + x$ $G(x) = x^2 + 2x - 7$

a) $G(-3) - F(-1)$

b) $\frac{f(-6)}{g(4)}$

3.) (5 pts) Find the domain of the given function. Express the domain in interval notation.

a) $g(x) = \frac{\sqrt{4x-8}}{2x}$

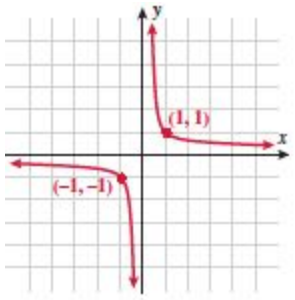
4.) (5 pts each, 10 pts total) Determine whether the function is even, odd, or neither.

a) $f(x) = 2x^3 + x^2$

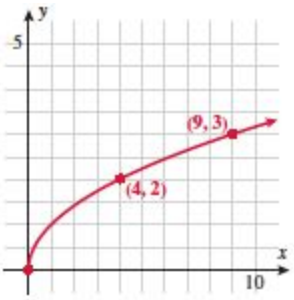
b) $g(x) = |x| + x^2$

5.) (5 pts each, 10 pts total) For each of the following graphs: Name the graph, define the domain and range, and determine whether it is even, odd, or neither.

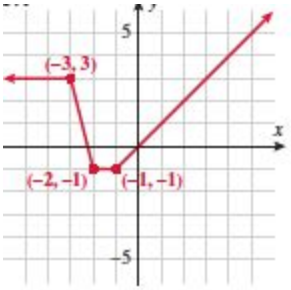
a)



b)



6.) (5 pts) State the domain, range, and the x-intervals where the function is increasing, decreasing, or constant. Find where f(x) = 0.



7.) (5 pts each, 10 pts total) Find the average rate of change for the function from:

x = 1 to x = 3.

a) $f(x) = 4 - x^2$

b) $g(x) = \sqrt{x^2 - 1}$

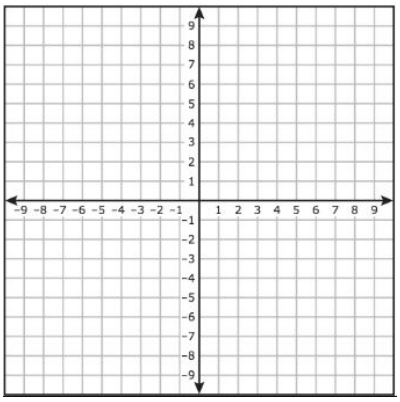
8.) (5 pts each, 10 pts total) Find the difference quotient for the following functions:

a) $f(x) = x^2 + 2x$

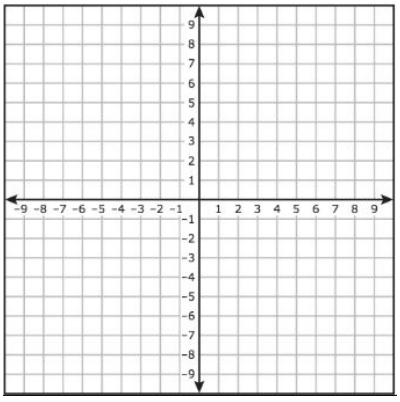
b) $g(x) = 5x - x^2$

9.) (5 pts each, 10 pts total) Draw the parent function. Next, describe, in words, the transformation. Draw the function and include the vertex, if applicable.

a) $f(x) = (x - 5)^2 + 6$



b) $f(x) = |3x - 3| - 2$



10.) (5 pts) Evaluate the functions for the specified values, if possible.

$$f(x) = 3x - 5 \qquad g(x) = x^2 + 2$$

a) $(f - g)(4)$

11.) (5 pts each, 10 pts total) Evaluate the functions for the specified values, if possible.

$$f(x) = 3x - 5 \qquad g(x) = x^2 + 2$$

a) $f(g(x))$

b) (g ○ f)(1)

12.) (5 pts each, 10 pts total) Find the inverse of each of the following functions.

a) $f(x) = \frac{x-2}{3}$

b) $g(x) = x^2 + 6$