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:



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.

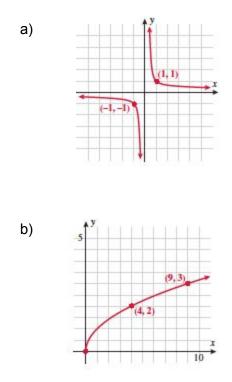
a)
$$g(x) = \frac{\sqrt{4x-8}}{2x}$$

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

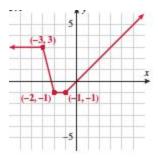
a)
$$f(x) = 2x^3 + x^2$$

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.



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.

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

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

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| -9 | -1 -2 -3 -3 -4 -5 -6 -6 -7 | |

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

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

a) (f - g)(4)

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

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

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