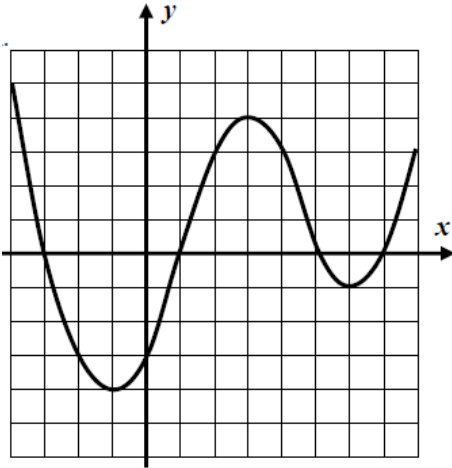


Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
Class: \_\_\_\_\_

Algebra  
Unit 4  
EC

To be eligible to receive extra credit on the unit test you must have a score below 75. To receive extra credit you must score an 80% or higher on this assignment (anything lower results in no extra credit). If you earn extra credit is calculated in the following manner:  $\text{Old Test Score} + (75 - \text{Old Test Score})(2/3) = \text{New Test Score}$ . This assignment will not be accepted late for any reason other than missing the day of school it is due in which case it must be turned in the next day you are in school even if you do not have class.

1) [2] List one interval that the following function ( $f(x)$ ) is decreasing on:



2) [2] In the function graphed in problem #1, what is the domain?

3) [2] In the function graphed in problem #1, what is the absolute maximum?

4) [2] In the function graphed in problem #1, what is  $f(3)$ ?

5) [2] In the function graphed in problem #1, which  $x$  satisfies  $f(x) = 4$ ?

6) [3] Find  $q(-8)$  using the function:  $q(x) = \frac{x^2 - 2x + 6}{5}$

7) [4] Graph the following piecewise function on the interval  $-3 \leq x \leq 4$

$$f(x) = \begin{cases} 3 - 2x & x \leq 1 \\ 2x - 1 & x > 1 \end{cases}$$

8) [3] Using  $g(x) = (x - 2)^2 + 5$  what is the average rate of change between  $g(-1)$  and  $g(5)$ ?

9) [4] The function  $h(x) = 200 - 5.5x^2$  shows the height (in feet) of a ball above the ground after it is dropped ( $x$  is the number of seconds that has passed). How far did the ball drop between the 4<sup>th</sup> and 6<sup>th</sup> second? Where is the ball after 9 seconds?

10) [3] Graph  $g(x) = x^2 - 4x + 7$  on the interval  $0 \leq x \leq 5$

