**Unit 1 Review**

Find the DOMAIN for problems 1 – 4. Write in interval notation.

1. f(x) =  2. f(x) =  3. f(x) = 4x + 3 4. f(x) = 

5. The graph of a function f is known. Then the graph of y = f(x-2) may be found by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. The graph of a function is known. Then the graph of y=f(-x) may be obtained by a reflection about the \_\_\_\_-axis.

7. True or False:

\_\_\_\_\_\_ a) The graph of y = -f(x) is the reflection about the x-axis of the graph of y = f(x).

\_\_\_\_\_\_ b) To obtain the graph of y = f(x + 2) – 3, shift the graph of y = f(x) horizontally to the right 2 units and

 vertically down 3 units.

8. Find the function that is finally graphed after the following transformations are applied to the graph of .

 a) 1. Shift up 2 units. b) 1. Reflect about the x-axis c) 1. Reflect about the y-axis.

 2. Reflect about the x-axis. 2. Shift up 2 units. 2. Vertically stretch by 3.

 3. Shift left 3 units. 3. Shift down 2 units.

 4. Shift right 4 units.

 f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. USE GRAPH PAPER. Draw the parent graph and then show each transformation..

a) f(x) =  b) f(x) =  c) f(x) =  d) f(x) =  e) f(x) = 

10. State the domain in interval notation. Then graph (on graph paper). Then use the graph to state the range.

a) f(x) =  b) f(x) =  c) f(x) = 

domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. Find , where , for the following two functions.

a) f(x) = 2x + 3 b) f(x) = 

12. Evaluate the piecewise function for f(-2), f(1), and f(4). 

13. Use the following graph to evaluate certain values and to find out when it is increasing and decreasing. Also, state the domain and range.

f(-2) = \_\_\_\_\_\_\_\_\_\_\_\_ f(1) = \_\_\_\_\_\_\_\_\_\_\_ f(x) = 0 when x = \_\_\_\_\_\_\_\_\_\_\_\_\_

domain\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

increasing\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ decreasing\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. The domestic postage rate for first class letters weighing 12 oz or less is 33 cents for a letter weighing 1 oz or less and 22 cents for each additional ounce (or part of an ounce). Express the postage P as a function of the weight x of a letter, with 0 < x  12.