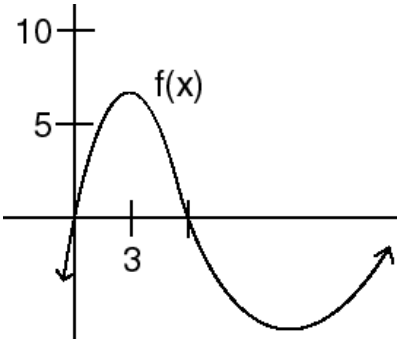
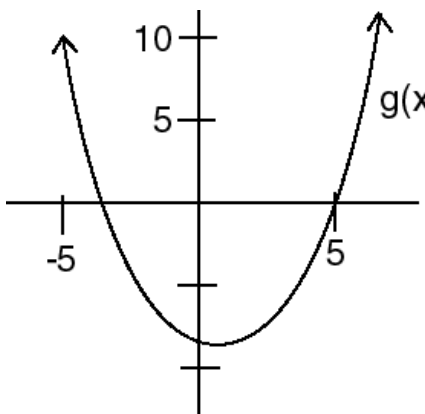


Investigating functions 2

NAME:

This worksheet will work on interpreting functional notation, determining function values, and determining the domain and range of functions.

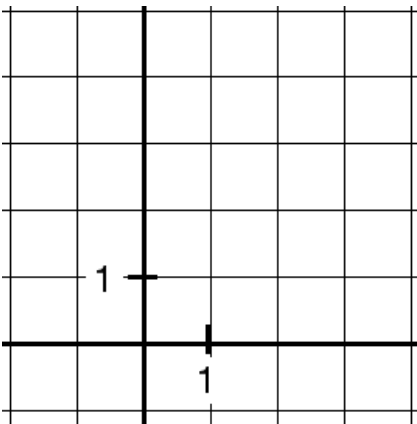
1. For each equation or graph, find the desired value(s). Estimates will be accepted for parts *a* and *d*. Please simplify part *b*.

<p>a.) Find $f(3)$ and $f(6)$.</p> 	<p>b.) $f(x) = 4x^2 + 6x$ Find $f(x-2)$.</p>
<p>c.) $g(t) = (5t)^2 + 4t - 8$ Find $g(-3)$.</p>	<p>d.) Find $g(0)$ and $g(-5)$.</p> 

These problems work on understanding domain and range. Remember domain can be thought of as the x values that you can put into the function and that will yield acceptable y values. Range can be thought of as the y values you can possibly get out.

2a.) Consider the function $y = \sqrt{3x + 4}$. Recall you cannot take the square root of a negative number (in the real number system). All x values that would result in the square root of a negative number would be excluded from the domain. Give one such x value that would be excluded from the domain.

b.) Graph this function on your grapher. Use the window $[-2, 4] \times [-1, 5]$ to match the graph paper given below. (Note: Make sure your graph looks like a curve and not a straight line. Although the calculator may not show it, the graph should hit the x -axis at $-\frac{4}{3}$.)

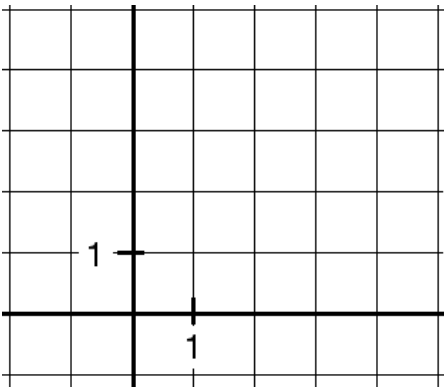


c.) Looking at the graph, what values of x are associated with the graph? In other words, what values of x will work in the function $y = \sqrt{3x + 4}$? This is the domain.

d.) Looking at the graph, what values of y are associated with the graph? In other words, what values could we get out for y ? This is the range.

3a.) Consider $y = x^2 - 4x + 3$. Are there any x values that would not work in the function? (Try to think of any x values that would force us to square root negative numbers or divide by zero. These values, if they exist, would be excluded from the domain.)

b.) Graph the function $y = x^2 - 4x + 3$. Use the window $[-2, 5] \times [-1, 5]$ to match the graph paper given below. (Note: The vertex (where it turns) is at $(2, -1)$. Graph it accurately.)



c.) Looking at the graph, what values of x are associated with the graph? In other words, what values of x will work in the function $y = x^2 - 4x + 3$? This is the domain.

d.) Looking at the graph, what values of y are associated with the graph? In other words, what values could we get out for y ? This is the range.