**Graphing Functions**

Now that we know what a function is, let’s deal more with graphing them. This will be easier than you think and might actually be review for most of you.

Example 1: Graph the function 2x + 1 = y

The first thing you need to do is come up with a set of ordered pairs. These are also known as coordinate points. To do this create a table with both an x and y column.

|  |  |
| --- | --- |
| **x** | **y** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Then pick an x-value and plug it into the equation from above. What you get will be your y-value. I like to pick numbers around zero. So for example I would try the numbers -2, -1, 0, 1, and 2. Go ahead and try these numbers. Put them up in the table and then solve the function each time to get a y-value. There is space below to show your work.

When you are done, get some graph paper and plot your points.

There is another way I might ask you to graph a function. I might give you the function and ask you to solve it for the given domain values.

What are domain values? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

That’s right they are the x-coordinates. Let’s look at an example problem.

Example 2: Graph the function with the given domain. –x + 2y = 6; D:{-4, -2, 0, 2}

Now before you can begin to graph this function you first have to get y by itself. This means you’re going to have to manipulate the equation for y. (It’s Chapter 2 all over again!) Work out the steps to get y by itself below.

When you’re done you should have . Now set up the x/y table like we did in Example 1. Except now instead of just randomly picking x values, you’re going to use the domain values you were given in the problem statement.

|  |  |
| --- | --- |
| **x** | **y** |
| -4 |  |
| -2 |  |
| 0 |  |
| 2 |  |

When you have gotten all the y-values, graph your points on the same piece of graph paper. Again there is space below to show your work if needed.

That’s all you need to know for the assignment, but before I begin I just want to really quick point out the difference between linear and quadratic functions. I’m sure most of you are familiar with how each one looks but it’s important that you know how to tell the two apart. So study this chart for a few minutes before moving on to the assignment.

|  |  |
| --- | --- |
| **Linear Functions** | **Quadratic Functions** |
| y=2x+6, y= -x – 3 | y=x2 + 4, y= -2x2 - 8 |
| Graph is shaped like a line | Graph is shaped like a parabola |

*Do Problems:* pg 256 #13-24