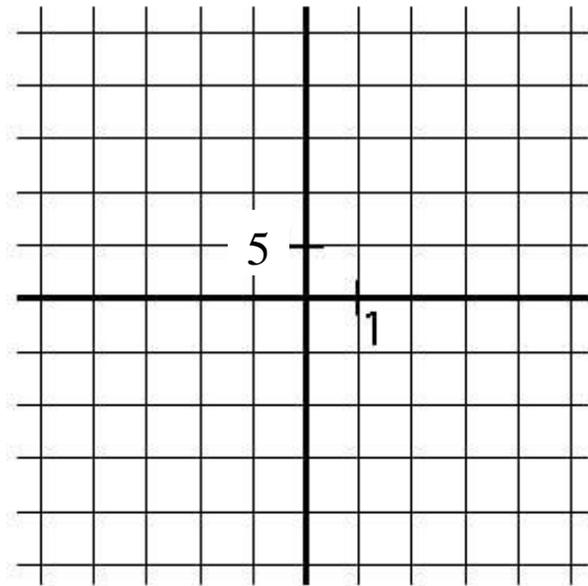


This worksheet is designed to get us to think about the various functions we will work with throughout the semester. It is a good idea to have these basic graphs in your head.

1. Complete the table below for the function $f(x) = x^2$. This is called the square function.

x	$f(x)$
-5	
-3	
-1	
0	
1	
3	
5	

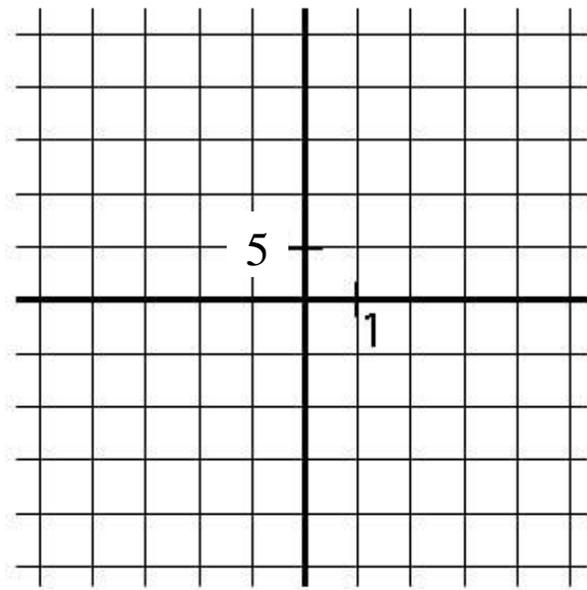
2. Use the graph paper below to graph these points. Connect them to form the graph of the function. Notice it is a parabola (U-shaped) with its vertex at the origin.



3. Complete the table below for the function $f(x) = x^3$. This is called the cube function.

x	$f(x)$
-3	
-2	
-1	
0	
1	
2	
3	

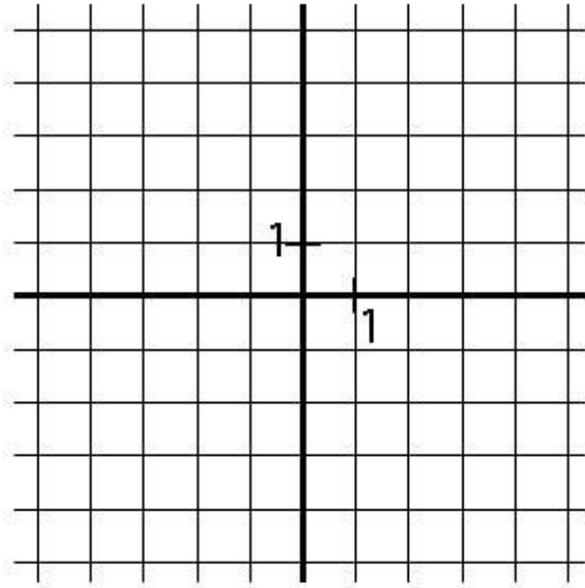
4. Use the graph paper below to graph these points. Connect them to form the graph of the function. Notice how one end goes up and the other end goes down.



5. Complete the table below for the function $f(x) = x$. This is called the identity function.

x	$f(x)$
-4	
-3	
-2	
0	
2	
3	
4	

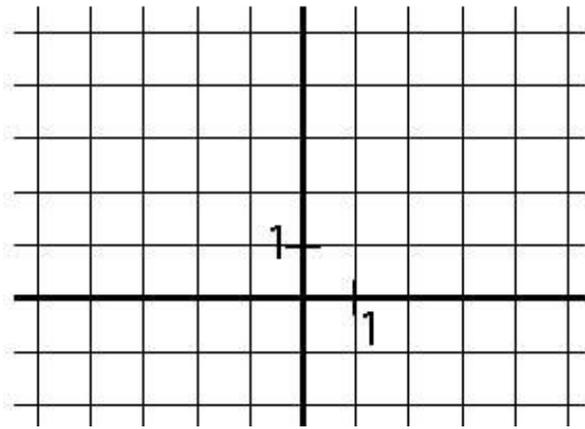
6. Use the graph paper below to graph these points. Connect them to form the graph of the function. Notice this is a straight line where the x and y values of each point are equal.



7. Complete the table below for the function $f(x) = |x|$. This is called the absolute value function.

x	$f(x)$
-3	
-2	
0	
2	
3	

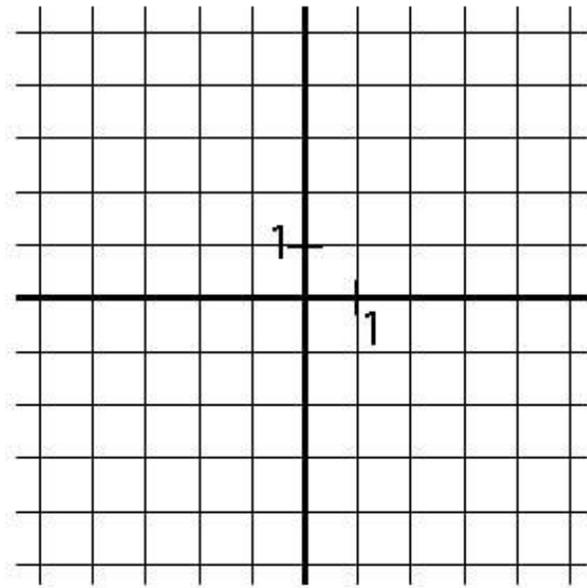
8. Use the graph paper below to graph these points. Connect them to form the graph of the function. Notice this is a V shaped graph.



9. Complete the table below for the function $f(x) = \frac{1}{x}$. This is called the reciprocal function.

x	$f(x)$
-5	
-3	
-1	
-.5	
0	
.5	
1	
3	
5	

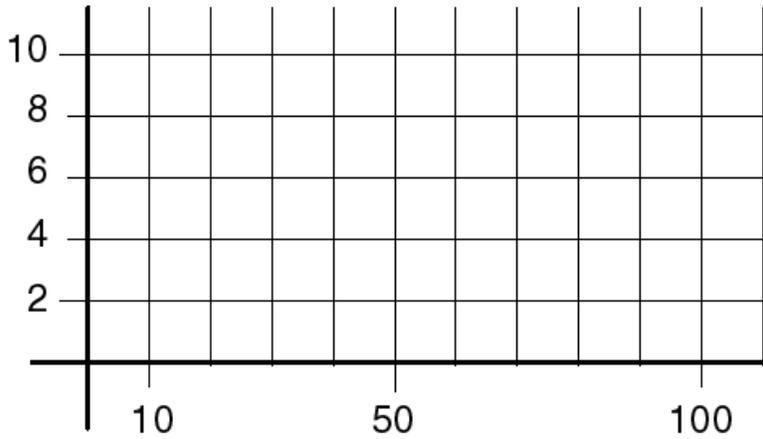
10. Use the graph paper below to graph these points. Connect them to form the graph of the function. (They do not connect in the middle. There should be two separate pieces.)



11. Complete the table below for the function $f(x) = \sqrt{x}$. This is called the square root function. (Why do you think there are no negative x or y values?)

x	$f(x)$
0	
10	
50	
70	
80	
100	

12. Use the graph paper below to graph these points. Connect them to form the graph of the function. Notice this is a curve that slowly rises as we get larger and larger values of x .



13. Complete the table below for the function $f(x) = \llbracket x \rrbracket$. This is called the greatest integer function. It is easier to think of this function in words rather than symbols. For each x value, its associated y or $f(x)$ value is the greatest integer that is less than or equal to x . For instance, $f(2.6) = \llbracket 2.6 \rrbracket = 2$ because 2 is the largest integer that is less than or equal to 2.6. Remember integers are the numbers $\{ \dots -2, -1, 0, 1, 2, \dots \}$.

x	$f(x)$
-2	
-1.5	
-1	
0	
1	
1.5	
2	
2.34	
3	
3.25	

14. Use the graph paper below to graph these points. Connect them to form the graph of the function. Notice this graph is made up of short horizontal segments like a staircase. Be sure to graph the segment endpoints appropriately with open or closed circles.

