Guess My Function

Here is an example of a function: y = 2x – 3. For this function,
If x = 0, y = -3.
If x = 1, y = -1.

1. a. If x = 2, y = ?
   b. If x = 1.5, y = ?
   c. If x = -1, y = ?

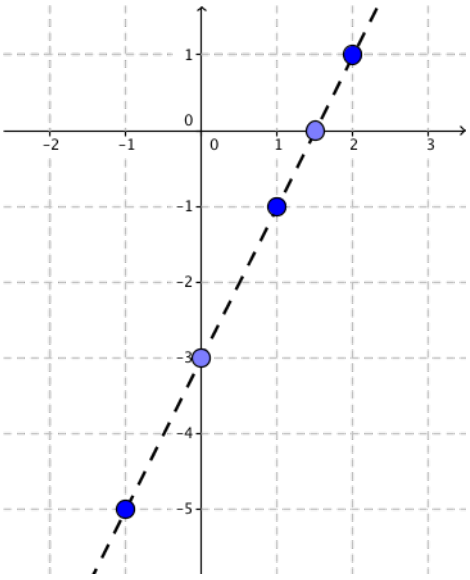
x is called the *independent variable*, or input. For this function, you can choose any number for x. y depends on x, so it is called the *dependent variable*, or output.

You can arrange the information about this function in a table:

x	y
-1	
0	-3
1	-1
1.5	
2	

2. Fill out the rest of the table.

You can also arrange the information in a graph:



3. Label the points with their coordinates.

Definition: A *function* is a rule that assigns to each input exactly one output.

On this page, we made a table and a graph from knowing the formula for the function.

On the next page, you will guess formulas for functions, knowing a table or a graph.

4. Guess a formula of the function for each table. (Hint: what can you do to x to get y?)

a.

x	y
-2	0
-1	1
0	2
1	3
2	4

b.

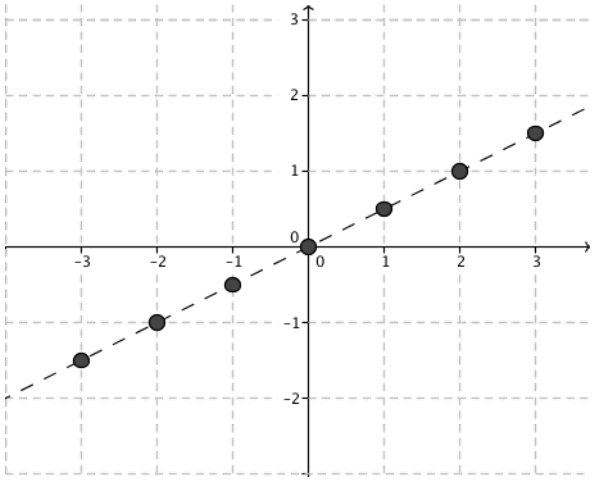
x	y
-2	-6
-1	-3
0	0
1	3
2	6

c.

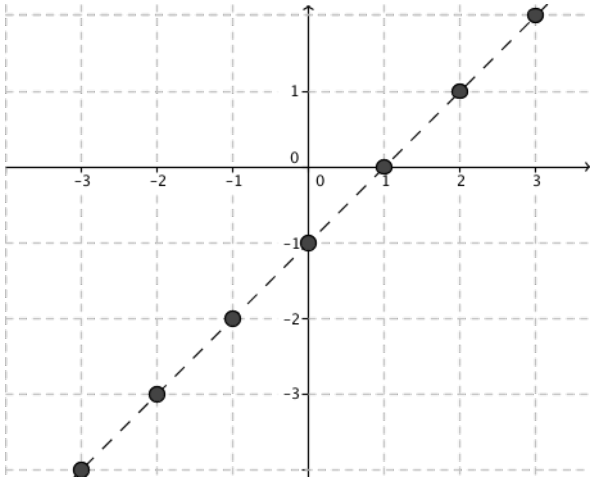
x	y
-2	-6
-1	-5
0	-4
1	-3
2	-2

5. Guess the formula of the function for each graph. (Hint: label the points with their coordinates.)

a.



b.



6. Which functions in #4 and #5 are proportional relationships?

7. Guess a formula of the function for each table. These are more challenging.

a.

x	y
-2	6
-1	5
0	4
1	3

b.

x	y
-2	-7
-1	-5
0	-3
1	-1

c.

x	y
-2	3
-1	0
0	-1
1	0

Functions appear in all sorts of situations in math. For example, the input could be the side of a square, and the output its area. In that case, the formula would be $A=s^2$.

8. For each function, write a formula, and name the input and the output. Which are proportions?
   a. The perimeter of a square
   b. Half of a number
   c. The area of a circle

