Finding the Rule

What is a Rule?

The rule is an equation which enables us to mathematically relate the variables in any given situation.

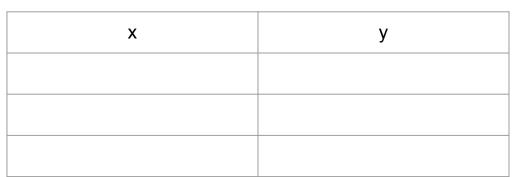
There are two types of situations that we will be looking at today:

1- When given the rule, complete the table of values

2 - Given a table of values, find the rule

Let's start off easy

Given the rule below, complete the following table of values:



y = 2x

Given the rule below, complete the following table of values:

y = -3x + 1

X	У

Finding the Rule

Every time that we are given a rule of a function or looking for the rule of a function, the rule is always in the form:

y = mx + b

This rule relates variables x and y

Finding the Rule

The letter m in the equation is called the rate. The rate tells us how the y-values change in relation to how the x-values change.

For example, what do we notice in the following table?

x	у
-1	-5
0	-3
1	-1
2	1

Finding the Rate (m)

To find m, we use the equation:

Rate = m = Δy Δx

Where, Δy is the change in the y-values

and

 Δx is the change in the x - values

Finding the Rate

So, let's go back and look at our table:

X	у
-1	-5
0	-3
1	-1
2	1

∆x =

∆y =

Rate = m = $\underline{\Delta y} = \Delta x$

Initial Value (b)

The letter b in the equation y = mx + b is called the initial value.

The initial value is the value of "y" when x = 0

Initial Value (b)

So, for our table of values:

x	У
-1	-5
0	-3
1	-1
2	1

Initial value = b = Rule: y = mx + b y =

Given the following table of values, find the rule that represents the situation below:

x	У
0	-3
1	-1
2	1
3	3

Given the following table of values, find the rule that represents the situation below:

X	у
-3	-1
0	0
3	1
6	2