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Question:

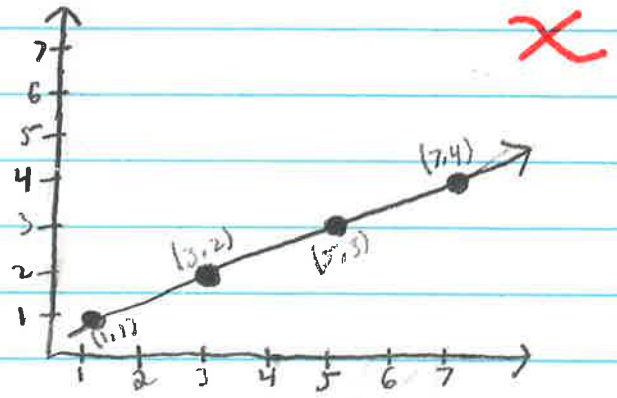
Describe and correct the error in graphing the line from the input-output table.

Claim: To begin, there is a situation in which an individual graphed functions on a function graph. However, there is a mistake in the creation of this graph. This is only because they forgot to put the x function before the y function in their ordered pairs.

Data:

Input, x	Output, y
1	1
2	3
3	5
4	7

Wrong Solution



CDC continued

Data

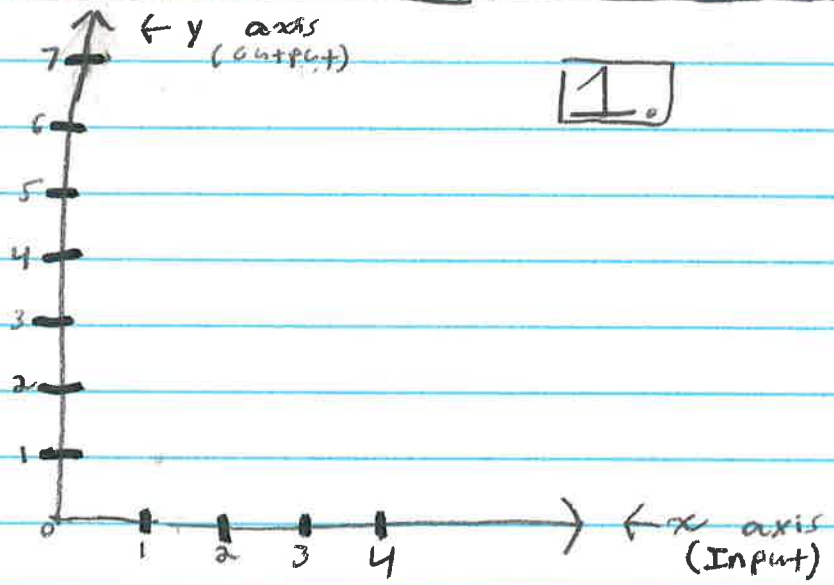
Correct Solution ✓

Table:

Input (x)	Output (y)	Ordered Pair (x, y)
1	1	(1, 1)
2	3	(2, 3)
3	5	(3, 5)
4	7	(4, 7)

NOTE: The input is ALWAYS the independent variable and the output is ALWAYS the dependent variable.

1.



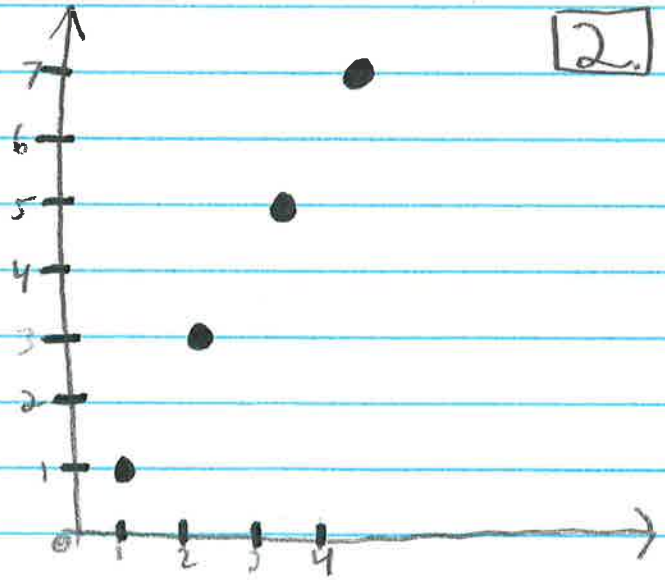
Steps in order:

1.) Creation of the graph.

2.) Plotting of the ordered pairs

3) Creation of the linear function. (Definition on page 8)

2.



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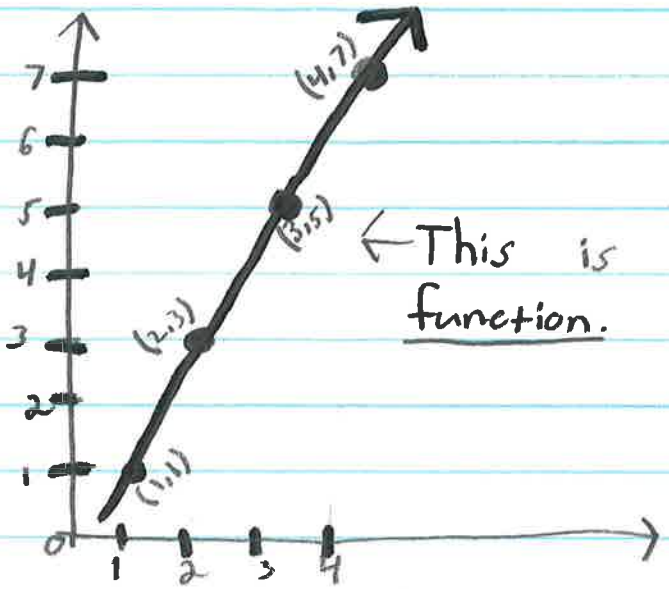
Data

3.



← This is a linear function.

Commentary

Starting off, to correctly make a function graph, you need to first make a function table as shown.

independent →

Input, (x)	Output, (y)
1	1
2	3
3	5
4	7

← Dependent

This table is going to basically be your guide for the making of your graph. Moving on, the next thing to do is

to is to extend that same table. This is because you need to put a section for ordered pairs. (An ordered pair is a pair of numbers/variables that can be placed in a table or a coordinate graph. The order of these numbers/variables is extremely important as the x variable/number ALWAYS comes before the y variable/number.) The section in the table should look like this.

Commentary

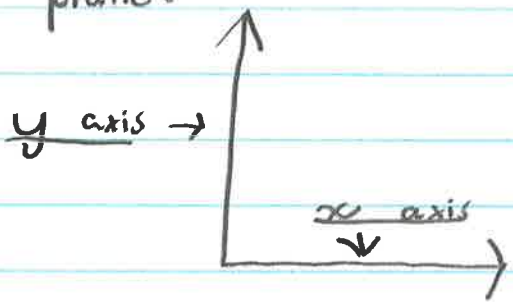
Input, (x)	Output, (y)	Ordered Pair, (x, y)
1	1	(1, 1)
2	3	(2, 3)
3	5	(3, 5)
4	7	(4, 7)

As you can see, the number in the input section will always come before the output in the ordered pair. Also, whenever you write an ordered pair, you always put parenthesis around the numbers.

To continue, the next thing you do is create a graph. First, you create a graph by putting the x axis and then

the y axis. The way to do this is shown:

After that, you then put the two lines together to get a coordinate plane.

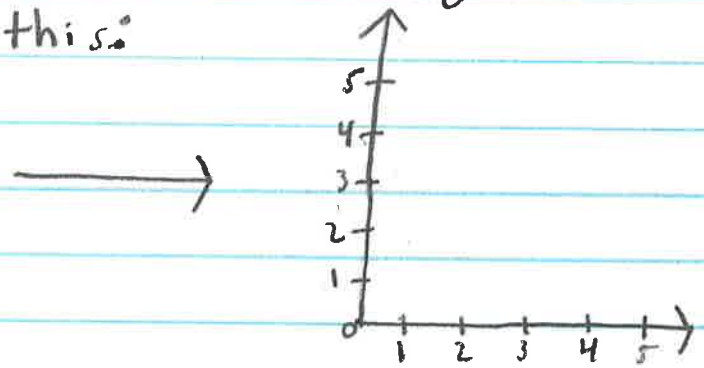


The reason the lines looks like this (⟶) is because it means that the lines can and will go on forever.

Next, after you do that step you now graph the numbers, from the function table or any set of given data, on the graph. As I said before, the input is always the x axis. So, the numbers on the x axis would look like this:

After that, you now order the y axis. That would look like this:

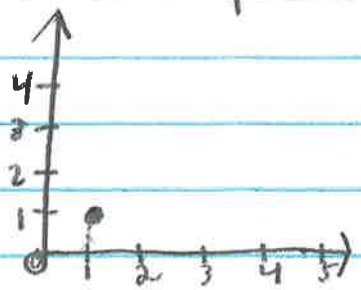
The two lines together would look like this:



One main rule that everyone needs to follow and has to follow is that all numbers should have a little indicator to indicate where they are. This is so that every number is neat and organized and is not hanging in space.

Continuing forward, the next thing to do is to plot the ordered pairs onto the graph. This step is quite simple to understand. For this

step you will need your function table. commentary
What you do first is look at your ordered pairs then you need to plot them on the graph. The numbers on the graph correspond with the numbers on the function table. For example, the input number of 1 will be the same as the 1 on the x axis. This is the same way with the output number but it'll be on the y axis. Whenever you locate both numbers, you then plot a dot by moving 1 number up from 1 from the x axis. This process will look like this:



As you can see, I moved one number up from the 1 on the x axis. Also, always remember that x always comes before y. This step repeats it self except different points will have different numbers. The graph with all the points plotted will look like this: →

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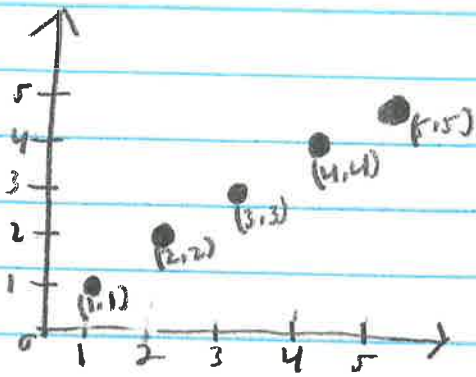
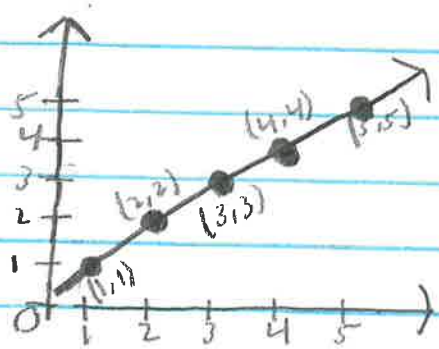


At this point, your graph is almost done.

The last step in the creation of this graph is to create a linear function. To do this, you already have every thing you need. The only thing you need to do is to draw a line. This line has to go through every single point you have on your graph. The line you put has to be a <u>STRAIGHT</u> and <u>PRECISE</u> line. If it does not meet these characteristics then it won't be a <u>linear</u> function. Anyways, the line on your graph should look like this.



To sum up everything, the reason why the graph at the beginning was wrong was because the creator of the graph looked at the y axis first instead of looking at the x axis first. Anyways, to end, I hope I answered the question for you and I hope I taught you how to graph functions well and you now understand how it is done. Ending