

Function Junction

TN standards 2009-2010:

Seventh grade:

- ✓ 0706.3.2 Represent and analyze mathematical situations using algebraic symbols.
- ✓ 0706.3.3 Identify a function from a written description, table, graph, rule, set of ordered pairs, and/ or mapping.
- ✓ 0706.3.4 Make tables of inputs x and outputs $f(x)$ for a variety of rules that include rational numbers (including negative numbers) as inputs.
- ✓ 0706.3.5 Plot points to represent tables of linear function values.
- ✓ 0706.3.6 Understand that the graph of a linear function f is the set of points on a line representing the ordered pairs $(x, f(x))$.

In this activity, you will explore:

- making tables of inputs and outputs based on written mathematical situations
- plot points using pencil/ paper and technology
- writing a function rule for a given line

Problem 1

On page 1.3, you were presented with a mathematical situation. Fill in the table below on both paper and the TI-Nspire(1.4). Use the nav pad to move around on the page.

	1.1	1.2	1.3	1.4
A	week	B	balance	C
1	0	-	12	
2	1	-	9	
3				
4				
5				

x
y

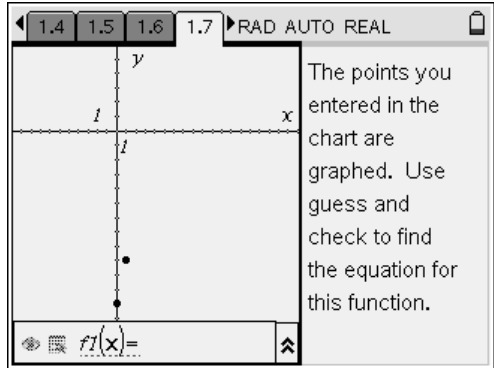
What do you notice about the x-coordinates? (1.5)

What do you notice about the y-coordinates? (1.6)

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You will know you have the right function rule when the line “connects the dots.” Plot the points from page 1.4, then write in the equation you found for $f_1(x)$.

Hint: Notice the scale. All of your points will not fit in this window.



Get your teacher's signature. _____

Problem 2

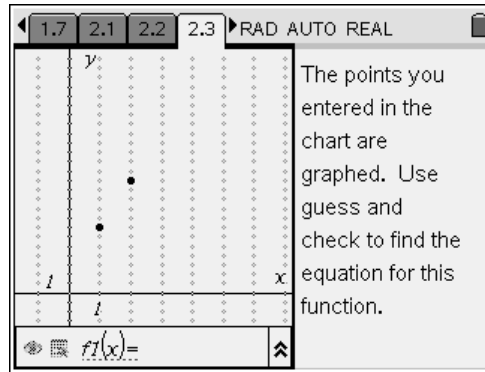
On page 2.1, you were presented with another mathematical situation. Fill in the table below on both paper and the TI-Nspire(2.2). Use the nav pad to move around on the page.

	A week	B balance	C	D
1				
2				
3				
4				
5				
B1				

	A week	B balance	C	D
6				
7				
8				
9				
10				
B10				

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Sketch what is on your screen and write in the equation you found for $f_1(x)$.



What relationship(s) do you see between the information in the table and the function of the line?

Get your teacher's signature: _____

Problem 3

On page 3.1, you were presented with another mathematical situation. Fill in the table below on both paper and the TI-Nspire(3.2). Use the nav pad to move around on the page.

The image shows a TI-Nspire calculator screen with a table. The navigation tabs at the top are 2.2, 2.3, 3.1, and 3.2. The current page is 3.2, titled 'RAD AUTO REAL'. The table has three columns labeled A, B, and C. The first row is a header row. The second row has a diamond symbol in column A. The third row has the number 1 in column A, 0 in column B, and 0 in column C. The fourth row has the number 2 in column A, 1 in column B, and 30 in column C. The fifth row has the number 3 in column A. The sixth row has the number 4 in column A. The seventh row has the number 5 in column A. At the bottom of the screen, there is a field for the function equation, labeled $A1 = 0$.

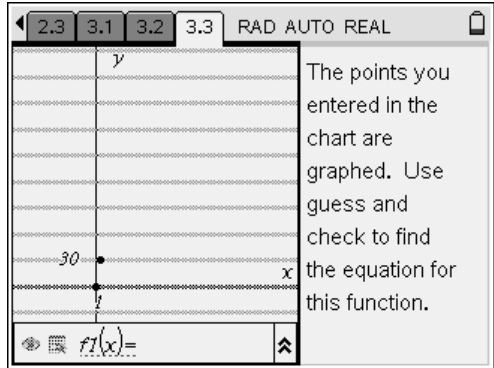
A	B	C
♦		
1	0	0
2	1	30
3		
4		
5		

The image shows a TI-Nspire calculator screen with a table. The navigation tabs at the top are 2.3, 3.1, 3.2, and 3.3. The current page is 3.3, titled 'RAD AUTO REAL'. The table has three columns labeled A, B, and C. The first row is a header row. The second row has a diamond symbol in column A. The third row has the number 6 in column A. The fourth row has the number 7 in column A. The fifth row has the number 8 in column A. The sixth row has the number 9 in column A. The seventh row has the number 10 in column A. At the bottom of the screen, there is a field for the function equation, labeled $A10$.

A	B	C
♦		
6		
7		
8		
9		
10		

Sketch what is on your screen and write in the equation you found for $f_1(x)$. At this point, you should be able to get the function by examining the table.

Hint: Notice the y-axis has intervals of 30, while the x-axis has an interval of 1.



How did you use the table to help you find the function rule?

Problem 4

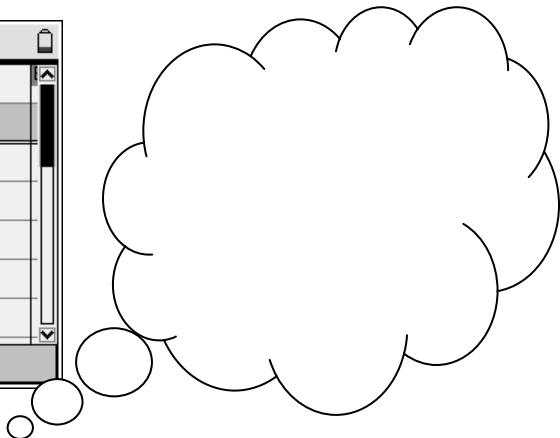
NOTE: PROBLEM 4 is not on your TI-Nspire. You will do problem 4 on this paper only. ☺

Examine the information in the table. What is the rule (function) for getting from a to b?



Show your thought process in the cloud.

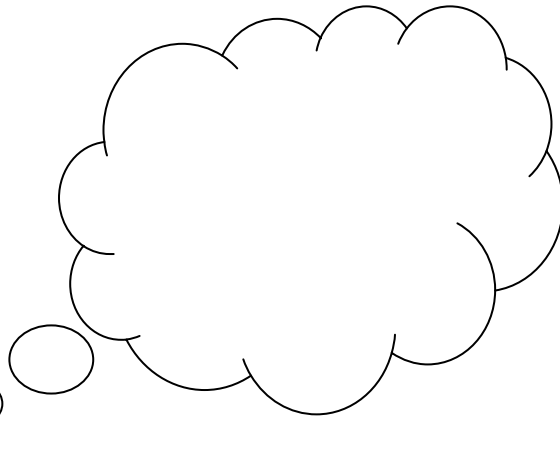
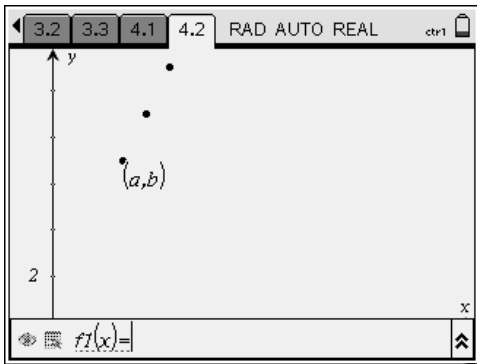
	a	b	c	d
1	3	7		
2	4	9		
3	5	11		
4	6	13		
5	7	15		



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Examine the information in the graph. Sketch the function on the graph provided. Also write the function on the line provided. (The scale for the x-axis is 2. The scale for the y-axis is 2.)

Show your thought process in the bubble.



Challenge: Write an original problem that satisfies the function, $f(x) = 4x + 5$.

Congratulations, you are a function master 😊 Please turn your paper in to your teacher now.