Date

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.
- \checkmark 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	3 1.4 ▶RAD AUTO RI	EAL	Û
	A week	^B balance	C D	
+				
1	0	-12		
2	1	-9		
3				
4				
5	\sim	\sim		
	A1 (
	X	У		

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

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

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 f1(x).

Hint: Notice the	1.4 1.5 1.6 1.7 R AD	AUTO REAL
scale All of your	μ γ	The points you
points will not fit		entered in the
in this window	1	chart are
	Ì	graphed. Use
·······	ł	guess and
		check to find
	¦● ¦	the equation for
		this function.
	⊕	*

Get you 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.

1.6 1.7 2.1	2.2 RAD AUTO	REAL	1	
A week	B balance	С	D	^
•				
1				
2				
3				
4				
5				
B1				•

1.6 1.7 2.1	2.2 RAD AUTO	REAL	Î
A week	B balance	С	
•			
6			
7			
8			
9			
10			[
B10			

Date_____ Class Period____ Name_____

Sketch what is on your screen and write in the equation you found for f1(x).

1.7	2.1	2	2.2	2.3	3►	RA	DΑ	NUTO REAL	Ì
······································	ν • 1 <i>f1</i> (x)=					× · · · · · · · · · · · · · · · · · · ·	The points you entered in the chart are graphed. Use guess and check to find the equation for this function.	

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.

2.2 2.3 3.1	3.2 RAD AUTO REAL	Û
A day	^B total_pages_read	
•		
1 0	0	
2 1	30	
3		
4		
5		
A1 0		L.

▲ 2.3 3.1 3.2	3.3 RAD AUTO REAL	Û
A day	^B total_pages_read	
•		
6		
7		
8		
9		
10		
A10		

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Sketch what is on your screen and write in the equation you found for f1(x). At this point, you should be able to get the function by examining the table.

	2.3 3.1 3.2 3.3 RAD AUTO REAL
Hint: Notice the y-axis has intervals of 30, while the x-axis has an interval of 1.	ν The points you entered in the chart are graphed. Use guess and check to find
	$\frac{x}{y} \text{ the equation for this function.}$

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.

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.)



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.