TI-*nspire*™

Function Junction

In this activity students will investigate the changes made in the equation of a function as it is transformed or translated.

It is very important for you to read every step. Hints are given throughout the worksheet to help you.

1) Turn your calculator on and press \textcircled{a} .		
2) Highlight 6. My Documents and press 🛞 .	Image: Second	x Spre 3 ocum ints
3) Scroll to Activities and press (*), find "Function Junction1" and press (*) again.	 *Function Junction1 Name △ MARY FIRESTONE Activities Alg1Act18_MiniGolfCourse *□Function Junction1 Copy of FT examples □box □Circumference □D2_1DiaCir □D2_2PointsandLines □D2_3BoxProblem 	Size OK ▲ 20K 15K 15K 103K 9K 9K 9K 6K €K
 4) Read the description of the activity. Press Im Im to advance to the next page. 		

5) Follow directions on the right side of	1.1 1.2 1.3 1.4 RAD AUTO REAL	
the screen.		Type x in the
To move from one side of the screen to the	y	entry line.
other, press (tr) (tab).		press enter
	5 5 f1 (x)=x	, and esc.
Each of the problems you should move	×	Use vour
your equation to a place on your screen where you can see the changes taking place	-16.97	cursor to
before moving the function.		move the
e	15*	function. When
To move the equation place the cursor over		you tilt the
the equation until you see a . Then double	* 🗮 f2(x)=	function up 🛛 🗖
click (\mathscr{K}) or press $(\mathscr{M})(\mathscr{K})$.		
To tilt the line up and down move the		
cursor over the function until you see the		
C5 symbol. Press (™) (K) or double click		
(×).		
b) Press (I i to advance to the next		
worksheet.		
	What is the shape of the function	
	f1(x)=x? You may describe it or sketch	
	it.	
	Answer	
	Answer	
7) Repeat step 6) until you have answered		
questions 1.4-1.5.		
8) Press (ctr) 🗈 to advance to 1.6 and	1.3 1.4 1.5 1.6 ▶RAD AU	TO REAL
follow the directions on the right side of	$\mathbf{f}_{2}(\mathbf{x}) = \mathbf{x}$	Turn a su las Alexa
the screen.	· • • • • • • • • • • • • • • • • • • •	Type x in the
To move the entire function up and down	15	onu y une, press enter
move the cursor towards the middle of the	5.+	and esc
graph of the function until you see \oplus .		Lise vour
Pross (rt) (*) or double click (*)		ose your
	16.97 1 5 20	cursor to
		cursor to move the
	-15	cursor to move the entire function
	-15	cursor to move the entire function up and down.

9) Press (III) Ito advance to the next pages. Answer questions 1.7 – 1.10 on your worksheet.	Image: 1.4 1.5 1.6 1.7 RAD AUTO REAL Question Image: 1.7 Image: 1.7 Image: 1.7 Image: 1.7 Question Image: 1.7 Image: 1.7 Image: 1.7 Image: 1.7 Image: 1.7 Question Image: 1.7 Image:	
	Answer ×	
 10) Continue to problem 2 and follow the directions on the right side of the screen. To move the sides of the function up and down move the cursor over the function until you see ∡. Press (ctrl) (⇒) or double click (⇒). 	■ 1.7 1.8 2.1 2.2 RAD AUTO REAL Type x ² in the entry Line, press enter, and esc. Use your cursor to move the sides of the function up and down. Notice the effect on your equation. ** $\equiv f2(x)=$	
11) Press (III) Ito advance to the next page. Answer question 2.2 and 2.3 on your worksheet.	2.2 2.3 3.1 3.2 ▶ RAD AUTO REAL Question What is the shape of the function f1(x)=x²? You may describe it or sketch it. Answer	

 12) Continue to problem 3.1 and follow the directions on the right side of the screen. To move the entire function up and down or side to side, move the cursor towards the middle of the graph of the function until you see . Press or or double click . Try to move the function slowly. It is important to see what happens when you move the function up and down and then what happens when you move it side to side. Try to focus on only one change at a time. See if you can distinguish which change in the graph effects which part of the equation. 	 2.2 2.3 3.1 3.2 RAD AUTO REAL Type x² in the entry line, press enter, and esc. Use your cursor to move the entire function up and down and then left and right. Try to do this very slowly so that you 	
13) Press (m) in to advance to the next pages. Answer questions 3.2 – 3.5 on your worksheet.	 ✓ 2.2 2.3 3.1 3.2 ▶ RAD AUTO REAL Question Explain what happens when you move the entire function up and down. Be specific about the changes in relation to where you moved your function. Answer 	