Higher-Order Testing

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Defect Number	Defect Description	Severity	Type of Higher-Order Testing	Test Case No. OR Description
1	Attempting to plot more than one function fails, and you are forced to restart the program.	1	Volume Testing	Plot one function, and then plot one or more and ensure it functions correctly.
2	Entering an excessively large number as a custom x domain causes a “function not defined error” and freezes the program.	1	Stress testing	X axis Range 001
3	Users experience confusion upon trying to plot a basic function because the “plot” button is far from the “enter function” area. Users typically click the “add” button instead of “plot”.	3	Usability testing	Have a random user attempt to plot the basic function “3x”
4	When trying to add a piecewise function, a window pops up with the interval with three buttons that are a +, -, and confirm. When clicking on the plus there are no directions or anything to prompt what goes in the boxes to add to the piecewise function.	3	Usability testing	Plot a piecewise function with an interval and adding into the unlabeled fields.
5	Putting in a complex function in the box will not plot the function. Having a complex function beyond more than ~9 operators will not plot the function	1	Stress testing	In the function field, put in 2*x/10+1*1*1*1*1*1*1*2*2/4+1+2+2+2+2+2+2+2+2+2+2+2+2+2/9 and hit the plot function.
6	Nesting multiple functions and hitting plot will not plot the function given. It will	2	Stress testing	Fill the function field with

	show up with an empty plot and freeze the application			nested trigonometric functions like cos(tan(sin(cos(x)))) and hit plot.
7	No instructions were given on how to center the graph, and when user attempted to manually center the graph nothing occurred. There were no inputs that allowed the user to center the graph.	2	Usability testing	Ensure user can center the graph at a specific location.
8	There were no instructions within the application that informed the user on how to use the application.	3	Usability testing	Ensure there is a comprehensive text instruction with the calculator.
9	On Mac this function works, however when users are using a Windows OS no matter what color they pick the graphs will always be plotted with black lines.	2	Stress Testing	Ensure the user can set the color of the graphs plotted.
10	No matter what slope is given for a function the same slope of 1 is always plotted on the graph.	1	Stress Testing	Ensure that any function a user inputs is plotted correctly.
11	The colors predefined in the plotting are extremely hard to see on bright screens, to the point that when this was being tested we thought that the coloring was broken and no lines were being shown. Less neon colors should be used.	3	Usability Testing	Graph Color 001
12	Many nested functions inside of each other will fail to graph. An example of this is the function sin(cos(sin(cos(sin(cos(x)))))).	2	Stress Testing	Elementary Function 001/002
13	Piecewise function functionality is really confusing to use and understand. Took several tries to figure out why/how it works.	2	Usability Testing	Piecewise Functions 001/002

14	Graphing calculator does not allow more than 5 graphs to plot. The button to add does not get disabled after 5 functions have been added, but clicking it does nothing.	2	Stress Testing	Multiple Elementary Functions 001/002
15	Typing in a number next to a variable (x) does not recognize that that number is multiplied, users must enter number * x to get the multiplication to properly work.	2	Usability Testing	Elementary Function 001/002
16	The application does not auto scale the UI. When testing on any resolution other than the specified 1080p per the instructions. The program does not launch in the correct layout.	2	Usability Testing	Launch application on >1080p screen
17	The calculator does not always follow the order of operations. An example is (4+3*4+3)-10/20-19.5	1	Usability Testing	Elementary Function 001/002
18	There are no instructions on how the set range function works. It would be assumed that a value of ‘10’ would yield the range -10 - 10, but it yields -5 - 5.	3	Usability Testing	X axis Range 001