Test Plan: Phase 2

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Test ID	Title	Severity	Instructions	Expected Result
Elementary Function 001	Input a simple function	2	Input a simple function (x + 1, 2x), and click 'Plot'	Function is plotted correctly
Elementary Function 002	Input a simple but more complicated function	2	Input a larger function that uses log, trigonometric operations, or uses large numbers (log(x) - 1020), click 'Plot'	Function is plotted correctly and scales to show graph (or at least gives the option of scaling)
Piecewise Functions 001	Input piecewise functions	2	Input a simple piecewise function and check that it graphs correctly	Graph shows each piece of piecewise function correctly
Piecewise Functions 002	Input many piecewise functions	2	Input up to 10 functions and see that they all graph correctly	Graph shows each piecewise function correctly
Multiple Elementary Function 001	Show multiple elementary functions on the same graph	2	Add several complex functions to the system and click 'Plot'	Graph should show each function on the graph correctly
Setting Range of X 001	Set the range of X on the graph	2	Set the range of X to scale the graph manually	Graph scales to the user input correctly
Graph Color 001	Set color of function in graph before plotting it	3	Set color for graph function	Function should appear as that color in the program

Graph Color 002	Set color of multiple functions in graph before plotting it	3		Set color for graph functions	Each function should have its own color in the program
Constant 001	Provide constant π	3		Click the π button and ensure it populates the function box	The π symbol should be put in the function box after the corresponding button is clicked
Constant 002	Provide constant e	3		Click the e button and ensure it populates the function box	The e symbol should be put in the function box after the corresponding button is clicked
Discontinuities 001	Identify discontinuities	2		Plot a function that includes a discontinuity	The graph displays the discontinuity
Endpoints 001	Identify endpoints	2		Plot a function that is undefined after some point	The graph displays the end of the defined range of the function
X axis Range 001	Preset x axis range	2		Plot any function	Ensure a default x axis range is set
Y axis Range 001	Preset y axis range	2		Plot any function	Ensure the y axis range is set to, by default, a manageable range
Piecewise Functions 003	Same colored function	3		Plot a piecewise function	Ensure that all plots are same color
Coordinates 001	View intersection	2		Plot 2 functions that intersect	Ensure that the intersection point is visible

Y value 001	Retrieve Y Values	2		Plot any function	Ensure that we can retrieve any Y for any X given
Plot 001	See graph plotted	1		Plot any function	Ensure that the graph is plotted and visible
Plot 002	Plot Axis	1		Plot any function	Ensure that the axis and units are visible after plotting
Zoom 001	Zoom in	2		Input zoom in value. Plot graph	Ensure that the canvas is correctly zoomed in.
Zoom 002	Zoom out	2		Input zoom out value. Plot graph	Ensure that the canvas is correctly zoomed out.
Shrinked axis 001	Shrinked x axis	2		Shrink x axis	Ensure there are zig zagged lines indicating a shrinked x axis.
Shrinked axis 002	Shrinked y axis	2		Shrink y axis	Ensure there are zig zagged lines indicating a shrinked y axis.
Exact Y component 001	Single Y component.	2		Plot a function where there is exactly one y for every x.	Ensure when a y is searched by using an x that the correct y value is highlighted in the canvas.
Exact Y component 002	Many Y components	2		Plot a function(s) where there are multiple y values for at least one x value.	Ensure when an x value is used to search for any y values all correct corresponding y

				values are highlighted.
Special Point 001	Intersection	2	Plot 2 functions that have an intersecting point.	Ensure when a intersection point is clicked that the coordinates of the point are visible.
Special Point 002	Endpoint	2	Plot a function that has a endpoint.	Ensure when a endpoint is clicked its coordinates appear.
Instructions 001	Intsructions	1	Open application.	Ensure there are instructions that are able to be viewed.
Center Graph 001	Manually move graph	2	Plot anything	Ensure user can move graph around to any point.
Operand Indicator 001	Operand Indicator	3	Use an operator like +, -, /, and * in the input	The system should indicate where the operands should be placed in respect to the operator.
Color Picker 001	Default color for all graphs	3	Plot 2 functions	Ensure that the system has a default color if no color is specified for the graphs
Bad Input 001	Garbage Input	2	Input incorrect inputs "FDSGJK:AF" + POIUJK)(*&^%$" into the fields provided.	The software should alert the user that the input is bad

Bad Input 002	Subtle Bad input	2	Input correctly into the fields and subtly add characters like "~ or & into x + 1	The software should alert the user that the input is bad
Color Picker 002	Choose a color	3	Choose a color for each graph you can put in	Each graph should have a color based on what the user has chosen