MATH 1351 TI-85 EXERCISE III
Building a custom catalog

Name: _____ SIN: _____

There are a lot of functions, programs, operations, etc. in the TI-85 that are not directly accessed from the keyboard. Some of these will be useful to us throughout this course. They can be accessed by pressing **2nd CATALOG** from the keyboard, then ***arrow down*** until the particular thing you are seeking is indicated by the little wedge at the left of the screen. However, there are a lot of things in the main catalog. In fact, choose **PAGE *down*** from the screen menu until you have seen the entire catalog. As you can see there must be a gazillion things in this catalog and you don't want to have to page through it every time you want to use something near the end; **tanh**, for example. Fortunately we can place those things we use a lot into a custom catalog. For example, find **abs** in the catalog and use the ***up/down arrow*** keys to designate it with the little wedge. Choose **CUSTM** from the screen menu and press the **F** key under an empty space in the custom screen menu. Next find **int** in the catalog and put it into an empty space in your custom menu. Henceforth to access **abs** or **int** you need only choose **CUSTOM** from the keyboard and the appropriate **F** key.

Now let's figure out just what these two functions do. Sketch the graph of the function y = abs (x).

Use **TRACE** to compare the values of x and abs (x). Explain what this function appears to be doing to numbers._____

_____

Next sketch the graph of the function y = int (x). This picture may be misleading, let's try a different graphing format. Choose **FORMT** from the GRAPH menu. Arrow down until the **DrawLine** command is flashing then over to **DrawDot.** Pressing **ENTER** changes to the DrawDot format. Meaning, only the points on the graph are lighted and no attempt is made to connect them with lines. Now choose **GRAPH** from the GRAPH menu and sketch the new picture.

Use **TRACE** in the **ZDECM** viewing window to compare the values of x and int (x). Explain what this function appears to be doing to numbers._____

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How would you describe the behavior of the function "at each integer?"_____
Graph each function in # 1, 2, & 3. Zoom in on the origin and explain in your own words what is happening "near the origin" on each graph.

1. y = x^2 + abs(x) _____

_____

_____

2. y = x ^3 + abs(x) _____

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3. y = sin x _____

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In # 4 - 9 we investigate the results of some compositions on the graphs. Attach a sketch of the graphs of each of the following functions. Use **DrawDot** format to get a good picture. Remember that the actual graphs of functions can not have vertical lines in them. Why not?

_____

4. y = sin (abs (x))
5. y = abs (sin (x))
6. y = sin (int (x))
7. y = abs (x^3)
8. y = (int(x))^2
9. y = int(x^2)

In # 10, 11, & 12 we investigate the results of adding functions. Attach a sketch of the graphs of each of the following functions.

10. y = x + int(x)
12. y = x - int(x)
13. y = abs(x) - int(x)

In # 14 try choosing **ZDECM** viewing window, and **DrawDot** format. Investigate the graph in #14 for x values at all multiples of ½. Provide a description and explanation of what you observe.

14. y = int (sin (Pi x)) +2