

Using Winplot – a brief introduction and resource guide

The purpose of this document is to introduce you to Winplot. A list of resources appears on page 5 of the document. The first four pages of the document give you a brief overview of some of the power of the software via an interactive tutorial. Go ahead and open the program by double-clicking on the *.exe file (Figure 1). When the program first opens, the Winplot screen is essentially blank other than a tip screen. Read as many tips as you like and then close the tips window. You also probably want to maximize the Winplot window (Figure 2). To create a graph, the first thing you need to do is choose a graphing option under the **Window** menu. Go ahead and select “2-dim” (Figure 3).

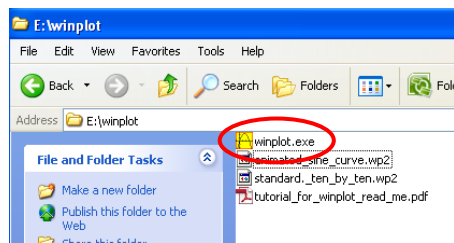


Figure 1

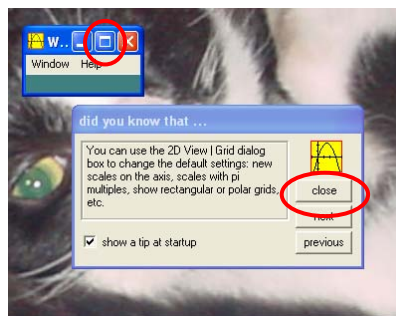


Figure 2

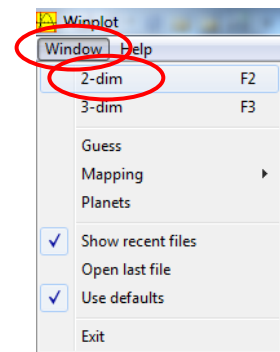


Figure 3

You select the type of graph you want via the **Equa** menu. Go ahead and select “Explicit” (Figure 4) Enter the formula x^2 , set the pen width to 3, click the color button, choose a color for your function, and close the color window (Figure 5). Finally, click “OK.”

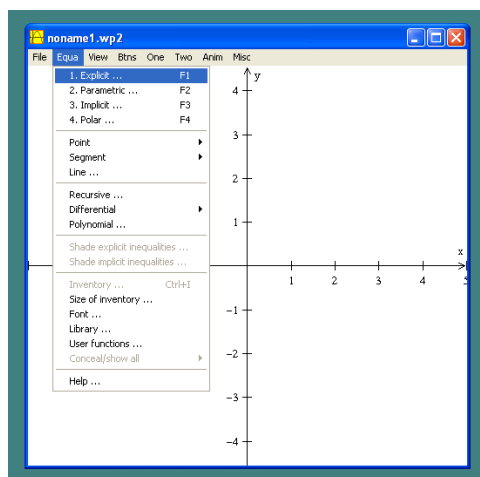


Figure 4

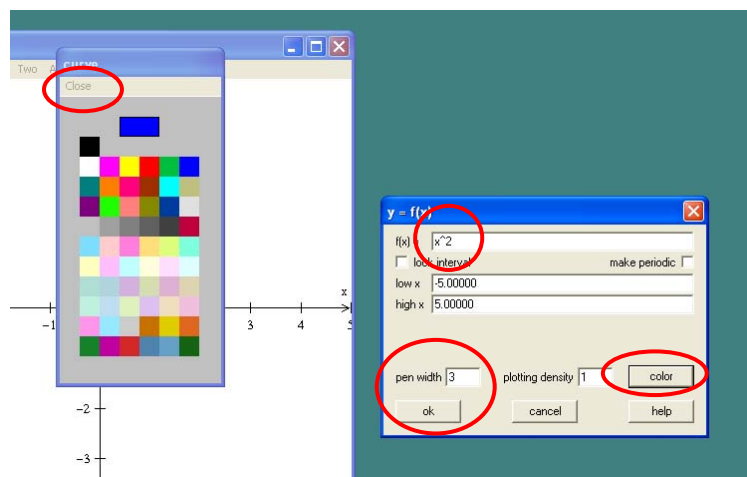


Figure 5

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To set the viewing window, select “View” from the **View** menu (Figure 6). Go ahead and enter the values shown in Figure 7 after clicking on the “set corners” option. (You don’t need to enter all the zeros, and because the “set corners” option is active, the values in the “set center” box are irrelevant.) Once the values are entered, click “apply.” I choose to end my windows in .99s because this prevents the scales at the end from being chopped off which sometimes happens if you use integer values in the view settings. Go ahead and close the view window.

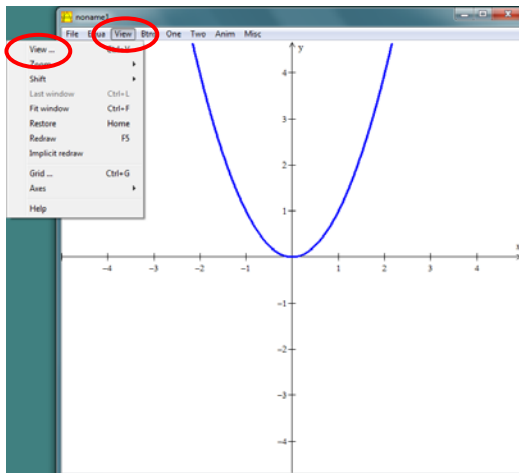


Figure 6

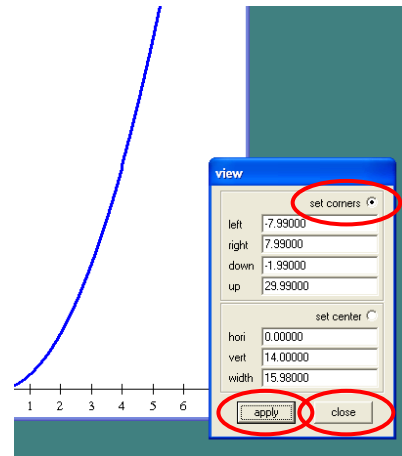


Figure 7

Now let’s add a grid to our graph. Select “Grid” from the **View** menu (Figure 8). Change the settings to match those shown in Figure 9 and click “apply.” Close the grid window.

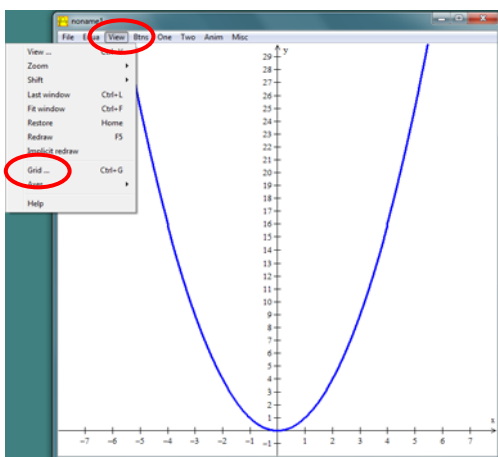


Figure 8

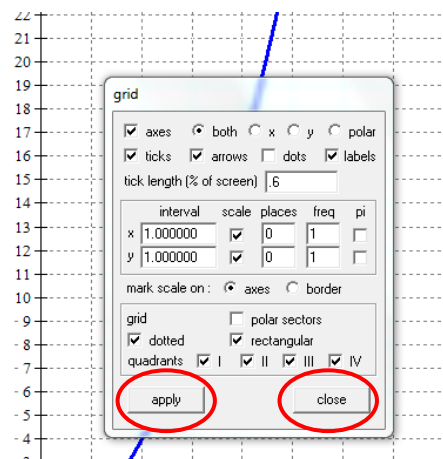


Figure 9

After the grid appears, I suggest that you change the gridline color to black for clearer print quality. Begin by selecting “settings” from the **Misc** menu (Figure 10). Next click, in order, the color option and gridline option (Figure 11). Click on black and close the dialogue box (Figure 11).

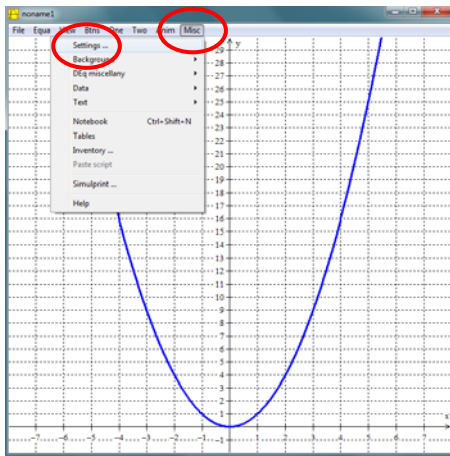


Figure 10

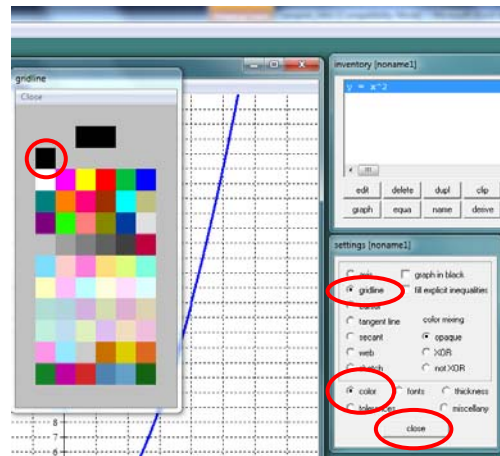


Figure 11

Let’s modify the existing function. Begin by selecting “inventory” from the **Equa** menu to see a list of the existing graphs (Figure 12). Then, with “ $y=x^2$ ” highlighted, click “Edit” (Figure 13). Enter the information shown in Figure 14; make sure that you click the “lock interval” option. Once the information is all in place, click “OK.”

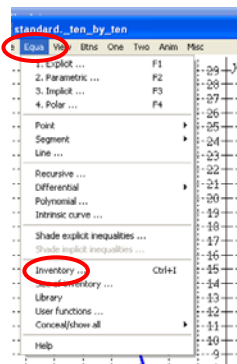


Figure 12

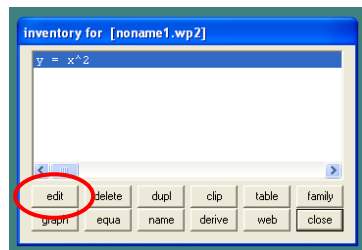


Figure 13

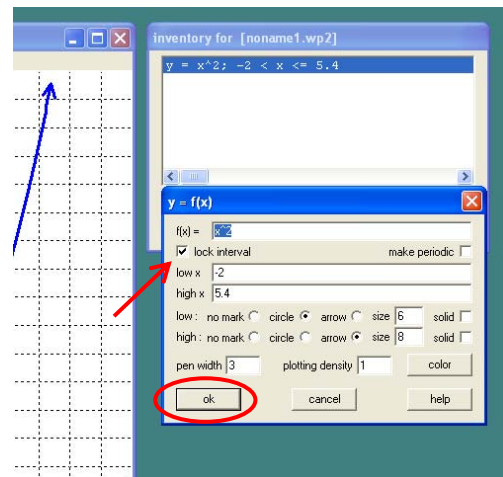


Figure 14

Let's create a piece-wise defined function by entering another explicit equation. After choosing "Explicit" from the **Equa** menu (Figure 15), enter the information and color choice shown in Figure 16; click "OK."

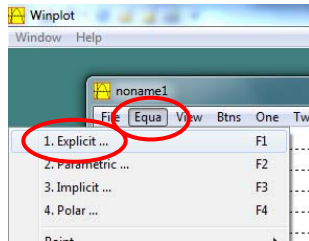


Figure 15

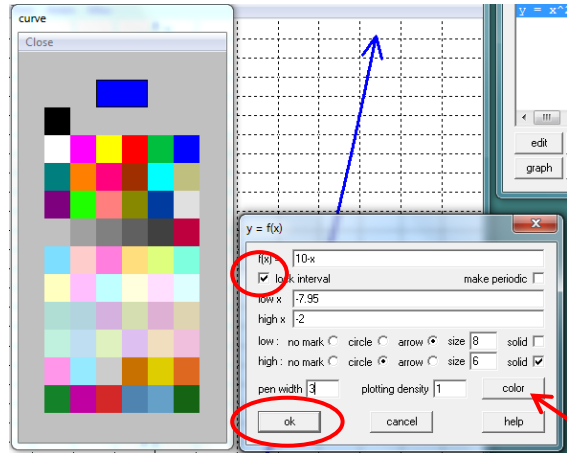


Figure 16

Figure 17 shows you where you go to change the labels on the axes. Figure 18 shows where you go to change the image size and to copy the image to the clipboard. You might want to check the image size because the default size is not square. When copying the image I use the "Bitmap to clipboard" option because if you use Ctrl+C the image is not copied as a bitmap and the image can get out-of-whack if you readjust the image size inside MS Word or whatever word-processing software you use.

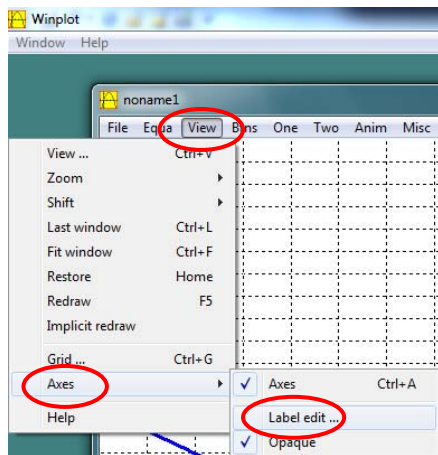


Figure 17

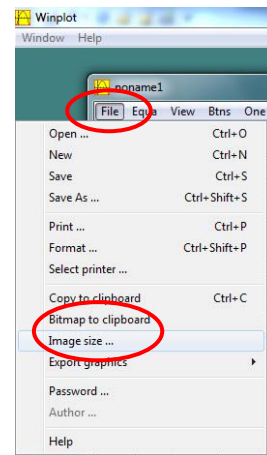


Figure 18

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Clearly there are several other features available with Winplot – I'll address some of this by example in the next box. In the meantime, I suggest that you go back to figures 8 and 9 and see what happens when you change those settings – I especially encourage you to fiddle with the x and y settings in the middle of the screen in Figure 9. I also encourage you to get comfortable with the “settings” dialogue box found under the Misc menu (figures 10 and 19). Notice that the options change when you select one of the five words at the bottom of the box. For example, to change a font, you need to click “fonts,” then click the type of font you want to change, and finally click edit (Figure 19).

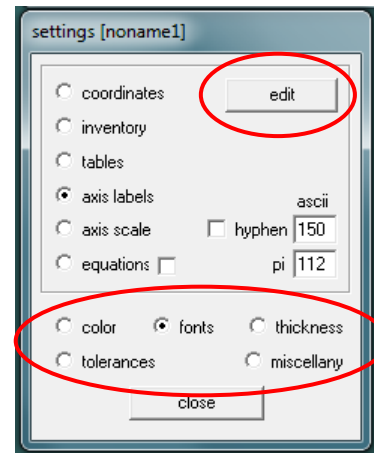


Figure 19

I have included two stock files in the Winplot folder. One of the files is a basic 10 x 10 grid (no need for you to continually reinvent the wheel) and the other is an interactive file that can be used to explore graphical transformations associated with the sine function. The 10 x 10 grid file is shown in Figure 20 and the sine transformation file is shown in Figure 21.

To access either file, make sure that your 2-d window is active (you will have to do that every time you open the program) and then select the relevant file from the “open” option found in the **file** menu.

The sine file has four parameters; click the arrow circled in Figure 21 to change the parameter to be manipulated. Once you have chosen the parameter you wish to change, you can change its value either by click and dragging the slider or you can change its value by typing in whatever value you desire. You'll probably want to visit the Grid dialogue box (accessed via the view menu) to see how I got the pi-labels on the graph.

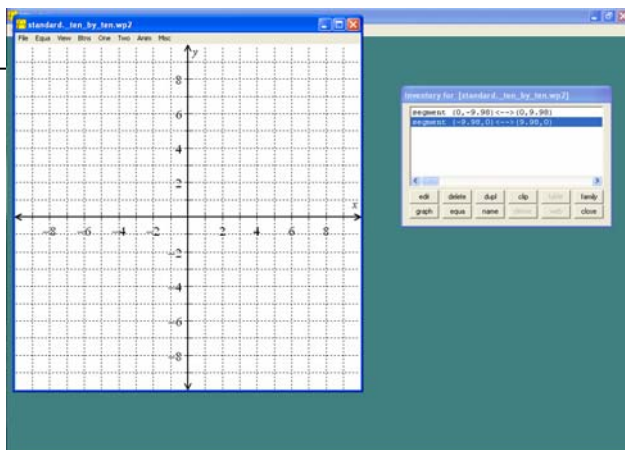


Figure 20

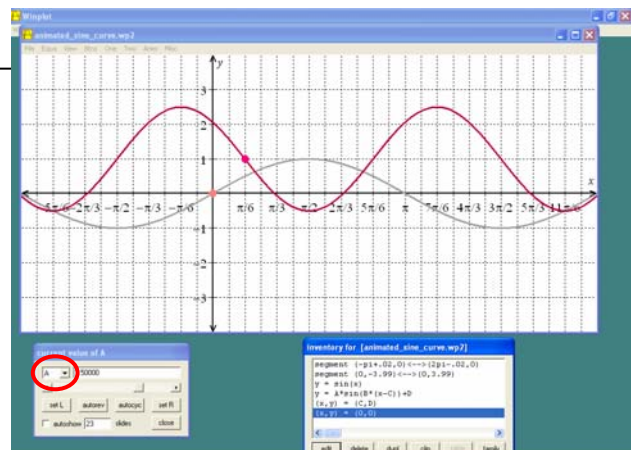


Figure 21

For additional resources please visit: <http://math.exeter.edu/rparris/wpsupp.html>

To download the software to your personal computer please visit: <http://math.exeter.edu/rparris/winplot.html>