



# Winplot Quick-Start guide

Winplot is a completely free graphics utility which you can download from the internet by searching for "Winplot" and saving to a suitable location.

To illustrate the basic features I will show you how to plot the graph  $f(x) = 5 + 4x - x^2$ .

Start the Winplot program and select <Window> the <2-dim> from the menu bar.

A new window will open. From the menu bar, select <Equa> the <Explicit>.

Delete the default function,  $x\sin(x)$  by highlighting it and pressing the delete key.

Type in  $5+4x-x^2$ . Notice that Winplot uses the ^ symbol (shift key 6) for "to the power of".

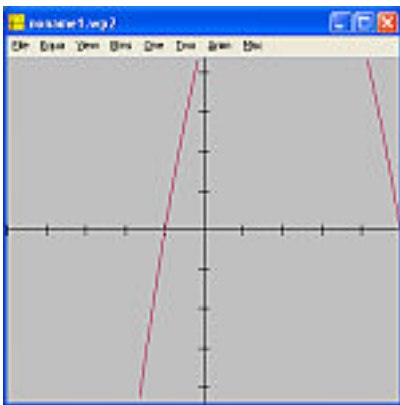
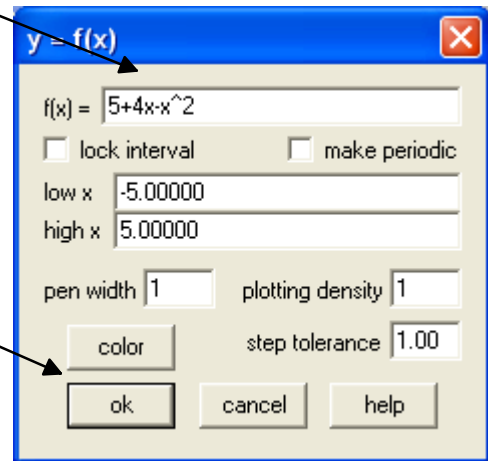
The dialogue box opposite shows the change.

Press "ok".

An inventory dialogue box will appear.

Close it using the close option.

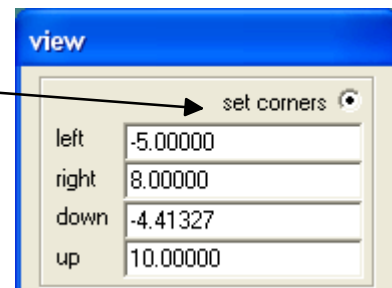
The basic graph will now be shown (below).



Notice that part of the graph is off screen. To correct this select <View> then <View> from the menu bar.

You can make changes to the lengths of the axes here. Change the **right** value to 8 and the **up** value to 10 as shown below.

Now check the **set corners** button. **Click apply.**



Close the **View** dialogue box and re-size the window to fit the screen (using the middle of the top right buttons).

The graph should now be in full view.



To change the background colour select <Misc> then <Color> then <Background>. Click on white and select **close**.

You can now make some improvements to the axes.

Select <View> then <Grid> from the menu bar.

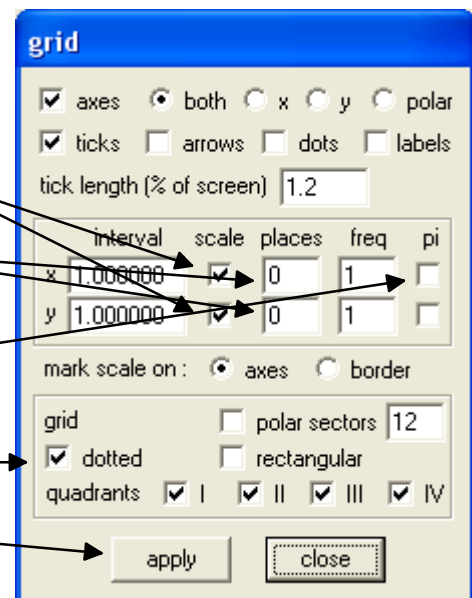
To show numbers on the axes check these boxes.

To remove the decimal places change these values to zero.

Deselect the check from this box when not plotting trigonometric functions.

Check this box to show a handy grid on the graph.

Finally, click apply and close the Grid dialogue box.



To make the graph even clearer, select <Misc> then <Axes> then <Screen thickness> and change the value to 2.

To change the colour and thickness of the function, select <Equa> the <Inventory>. Click on **Edit** and change the pen width to 2. Click on **Color** and choose any colour you wish. Close the dialogue box and click **OK** (and **close** the Inventory dialogue box).

That's it! There are lots of cool things to try for yourself. Here are some suggestions;-

To draw another function on the same graph, select <Equa> then <Explicit> and try the equation  $f(x) = 3x - 1$  (a straight line of course). Change the pen width to 2 and use another colour.

To find the approximate point of intersection of the graphs, simply take the pointer there using the mouse and left-click. You may wish to reduce the number of decimal places being displayed by selecting <Misc> the <Decimal places> and changing to 2.

To find the other point of intersection you will need to bring it into view by changing the **down** value in the **View** dialogue box to -10. See if you can find it yourself (hint: select <View> the <View> from the menu bar). Again, left click to find the approximate intersection point ... it's about (-2,-7).

Try solving  $5 + 4x - x^2 = 3x - 1$  algebraically to verify these results.

Another method of seeing more of the graph is to zoom in and zoom out using the **Page Up** and **Page Down** keys on the keyboard. Try using these keys now. This is a handy method when unsure of what numbers to use in the **View** dialogue box.

You can see all functions which are currently displayed by selecting <Equa> the <Inventory>. You can edit or delete equations from here.

You can save your graphs (and settings) by selecting <File> then <Save As>. Give your file a sensible name and save it to your My Documents folder. You may wish to create a new folder called MyWinPlot to make your graphs easy to find again.

To load previously saved work, just select <File> then <Open> and select your file (it will have a .WP2 extension).