

The code to graph the hidden lines is quite tedious. If your running a 4.77MHz PC, be prepared to wait. In fact, you may find the display times unacceptable. A coprocessor greatly increases the code execution speed but, you must have a Turbo

Pascal called TURBO-87.COM in order to take advantage of the 87 processor. 8MHz AT's and the '386 class machines are fine without taking advantage of the coprocessor.

RUNNING THE PROGRAM

Load your compiler and make FN3D1.PAS your work file.

Hit (R)un.

The first question is for viewer position.

Try 100 30 60 this puts YOU 100 units out 30° off the X axis and 60° off the Z axis.

The second question locates the plot region.

Try 1 1 0 0 this places a circular "blanket" off width 1 and depth 1 located at the origin (0,0). The program uses the

first two numbers to reference an ellipse passing through the

points 1 and -1 on the X axis and 1 and -1 on the Y axis.

If you typed in 1 3 0 0, the program would plot a region passing through 1 and -1 on the X axis and 3 -3 on the Y axis.

The last question is the Z scale factor. For exponential functions, keep this value small (0.2 or smaller). You may have to change this several times to get the view you want.

Hit return and you should be looking at what appears to be a giant noodle. It is called a Rocking Parabola.

TO CHANGE THE EQUATION

Go to the second page and down 3 lines. You should be looking

at something similar to: $f := zscX - 1 + 2\cos(\pi * Y)$

Change anything after zsc*(

If you can't get a good output (display looks like a vertical needle) multiply your equation by:

$$\exp(-xy)$$

A parabola with this looks like a hole in space.

CAUTIONS

Be sure you have the equation solved in terms of Z and that it includes functions of only X and Y.