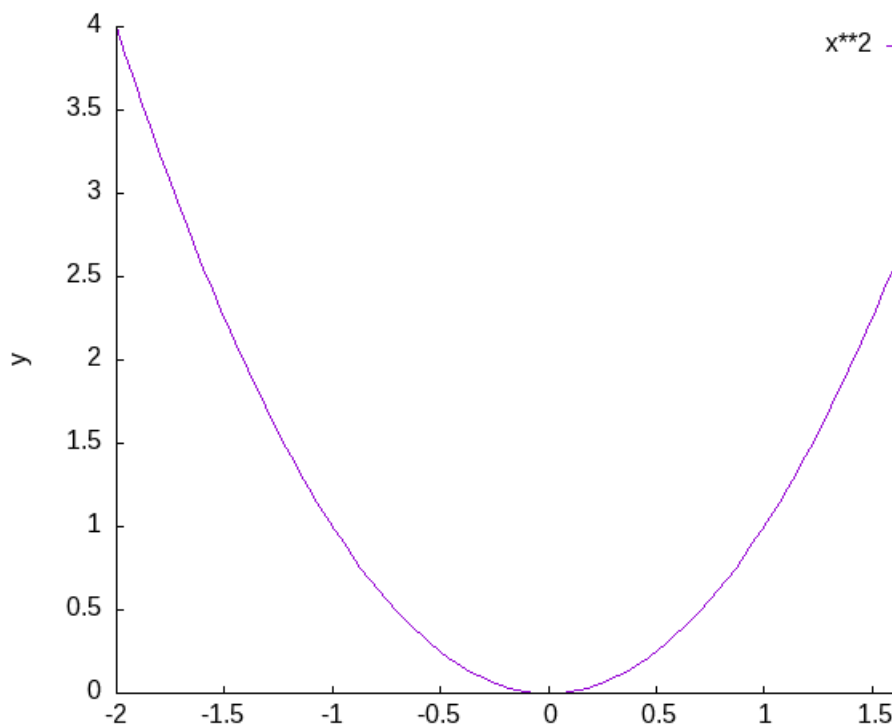


# Gnuplot

Purpose: Plotting mathematical relationships, either directly from a mathematical function specification, or from interpolating data. Gnuplot is a free and widely available program that can still be used to create all but the most complicated figures.

Start gnuplot, give the following command

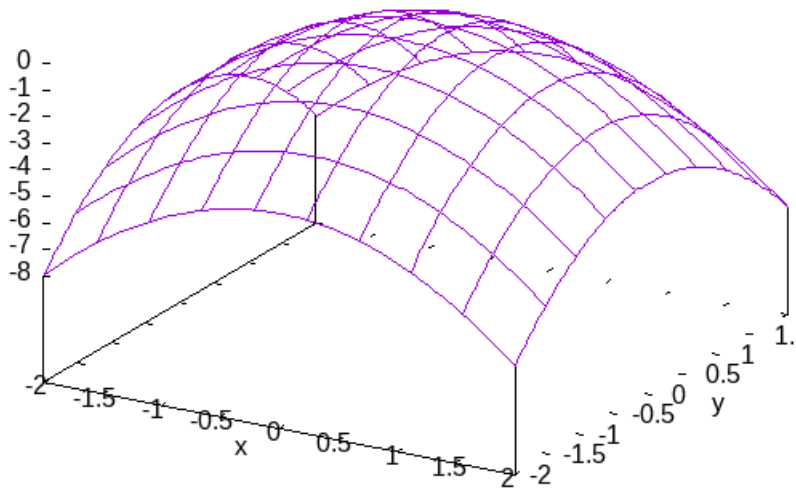
```
plot [x=-2:2] x**2
```



For a more advanced example, a 3-dimensional plot

```
splot [y=-2:2] [x=-2:2] -(x**2+y**2)
```

$$-(x^{**2}+y^{**2})$$



You have already seen examples of the two-dimensional and three-dimensional capabilities. As for how you can produce these, Gnuplot plots two types of information:

1. Mathematical formulas, such as  $x**2$ .

Very complicated formulas can be used, and all the standard mathematical functions, such as  $\sin(x)$ ,  $\exp(x)$ ,  $\log(x)$ , ... are available.

2. Data files.

Usually, will have to create special ASCII files for input to gnuplot.