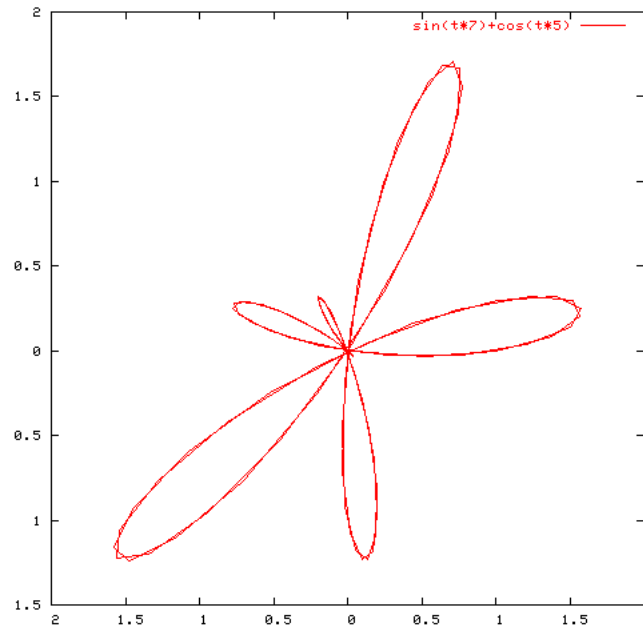


Gnuplot for plotting

The program `gnuplot` allows you to plot functions and data:



Running `gnuplot`

Most options for running `gnuplot` are invoked from inside `gnuplot`'s shell, so just

```
% gnuplot
```

is enough to get you started.



The basic plotting commands

- ☞ `plot` → operates either in rectangular or polar/parametric coordinates
- ☞ `splot` → lets you plot surfaces and contours
- ☞ `replot` → lets you redo a plot, such as when you change devices



Plotting functions

The basic command to plot a function of one variable is

```
gnuplot> plot f(x)
```



Functions

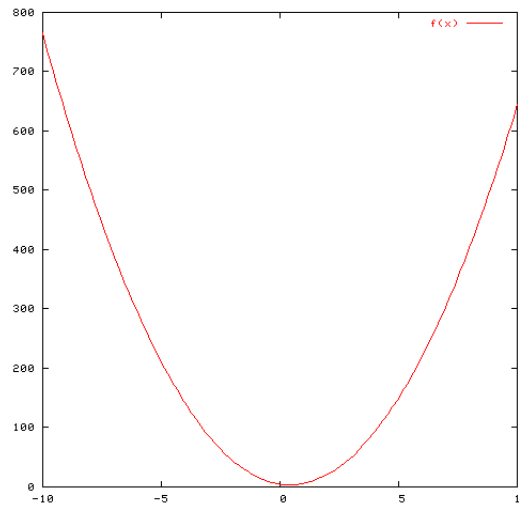
where $f(x)$ can be user defined or any of the standard math library functions:

| | | | |
|--------|-------|--------|---------|
| abs | acos | acosh | arg |
| asin | asinh | atan | atan2 |
| atanh | besj0 | besj1 | besy0 |
| besy1 | ceil | column | cos |
| cosh | erf | erfc | exp |
| floor | gamma | ibeta | igamma |
| imag | int | inverf | invnorm |
| lgamma | log | log10 | norm |
| rand | real | sgn | sin |
| sinh | sqrt | tan | tanh |

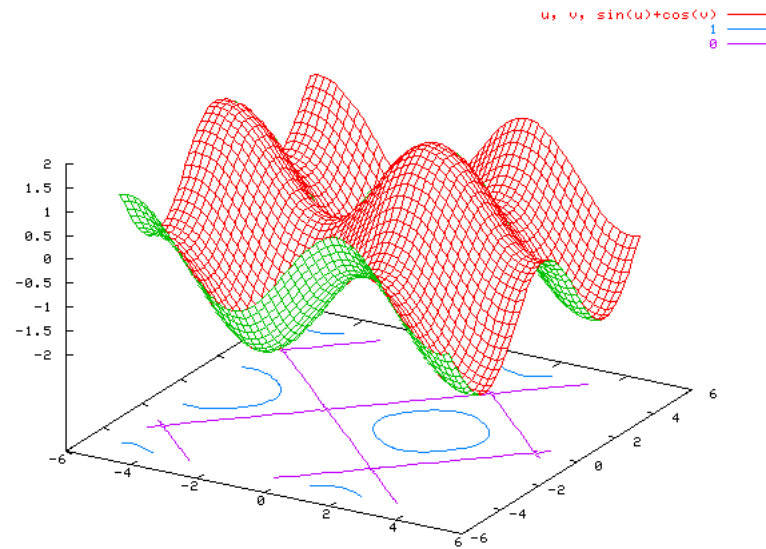


Examples of a simple function

```
gnuplot> f(x) = f(x) = 5 + (-6 + 7*x) * x  
gnuplot> plot f(x)
```



Example of surfaces and contours



Example of surfaces and contours

```
gnuplot> set parametric          # so we can specify u and v
gnuplot> set hidden3d           # nice looking mode
gnuplot> set contour base       # draw a base projection also
gnuplot> set isosamples 50,50   # lots of sampling
gnuplot> splot u,v,sin(u)+cos(v) # make the plot
```

