# gnuplot Plotting from the shell

## CONCEPTS

Settings stick until changed: set options stay active for later plots. Use unset <option> or reset to clear them.

**Data / function** file or expression
↓ set ...
**Settings** terminal, labels, ranges
↓ plot
**Plot** using, with, title
↓ set output
**Output** window, png, svg, pdf

Always set terminal first, then output, then plot. Call unset output at the end so the file is flushed and closed.

## RUNNING

**gnuplot**
Start interactive prompt

**gnuplot** *<script.gp>*
Run a script file

**gnuplot -persist -e "plot sin(x)"**
Plot and keep the window

**gnuplot -e "***<cmds>***"** *<script.gp>*
Run a command, then a script

**gnuplot -c** *<script.gp> <args>*
Script with arguments

**help** *<topic>*
Built-in help

## PLOTTING

**plot** *<expr>*
Plot a function of x

**plot '***<file>***'**
Plot a data file (column 1 vs 2)

**plot '***<file>***' using 1:3**
Pick columns for x and y

**plot '***<file>***' using 1:($2*2)**
Compute with column values

**plot '***<f1>***', '***<f2>***'**
Several datasets in one plot

**plot** *<a>*, *<b>* **title '***<name>***'**
Name a curve in the legend

**plot [***<x0>***:***<x1>***] [***<y0>***:***<y1>***]** *<expr>*
Set ranges for this plot

## PLOTTING (cont.)

**plot '***<file>***' using 1:2:3 with yerrorbars**
Error bars

**plot '< ***<cmd>***'**
Plot output of a shell command

## STYLES

**with lines**
Join points with lines

**with points**
Points only

**with linespoints**
Lines and points

## AXES AND LABELS

**set title '***<text>***'**
Plot title

**set xlabel '***<text>***'**
X axis label

**set ylabel '***<text>***'**
Y axis label

**set xrange [***<min>***:***<max>***]**
Fix the x range

**set datafile separator ','**
Read CSV

## OUTPUT

**set terminal png size 800,600**
Raster image

**set output '***<file>***'**
Write output to a file

## FIT AND STATS

**f(x) = a*x + b**
Define a function

**fit f(x) '***<file>***' using 1:2 via a,b**
Least-squares fit

## MULTIPLOT AND SCRIPTING

**set multiplot layout 2,2**
Grid of plots

**unset multiplot**
Finish the multiplot