gnuplot

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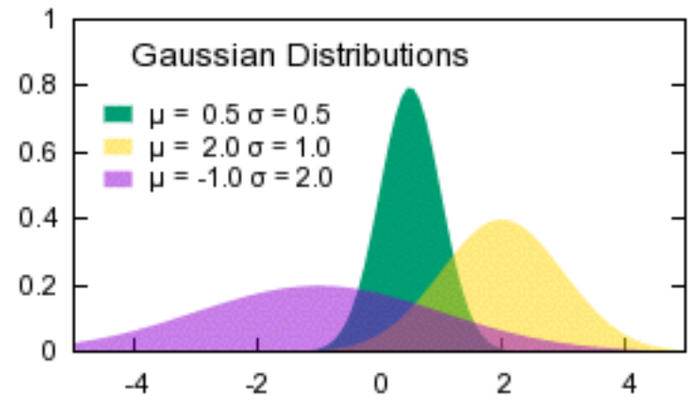
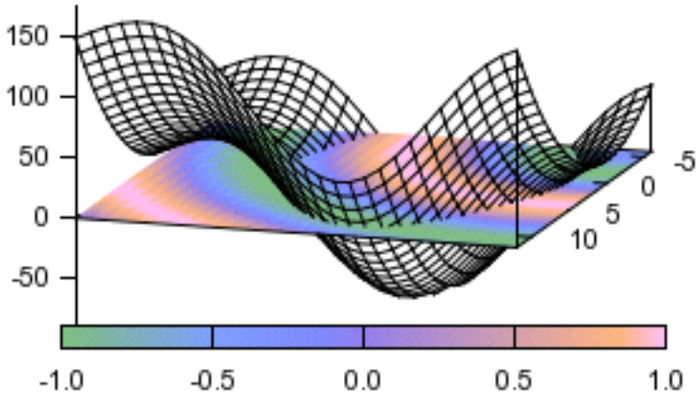
gnuplot

- gnuplot è un programma a riga di comando open-source per realizzare grafici (e non solo)
- completamente gratuito
- http://www.gnuplot.info
- vedremo principalmente esempi





Installare gnuplot

- Su linux con apt (debian, ubuntu…):
  sudo apt-get update
  sudo apt-get install gnuplot wxt

- Su linux con yum (fedora, RedHat…):
  sudo yum update
  sudo yum install gnuplot

- Su Mac:
  ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
  brew doctor
  brew update
  brew tap homebrew/science
  installare aqua term (da: http://sourceforge.net/projects/aquaterm/)
  brew install gnuplot --with-aquaterm -qt -wx

Comandi essenziali

- si esce con q

- help: h

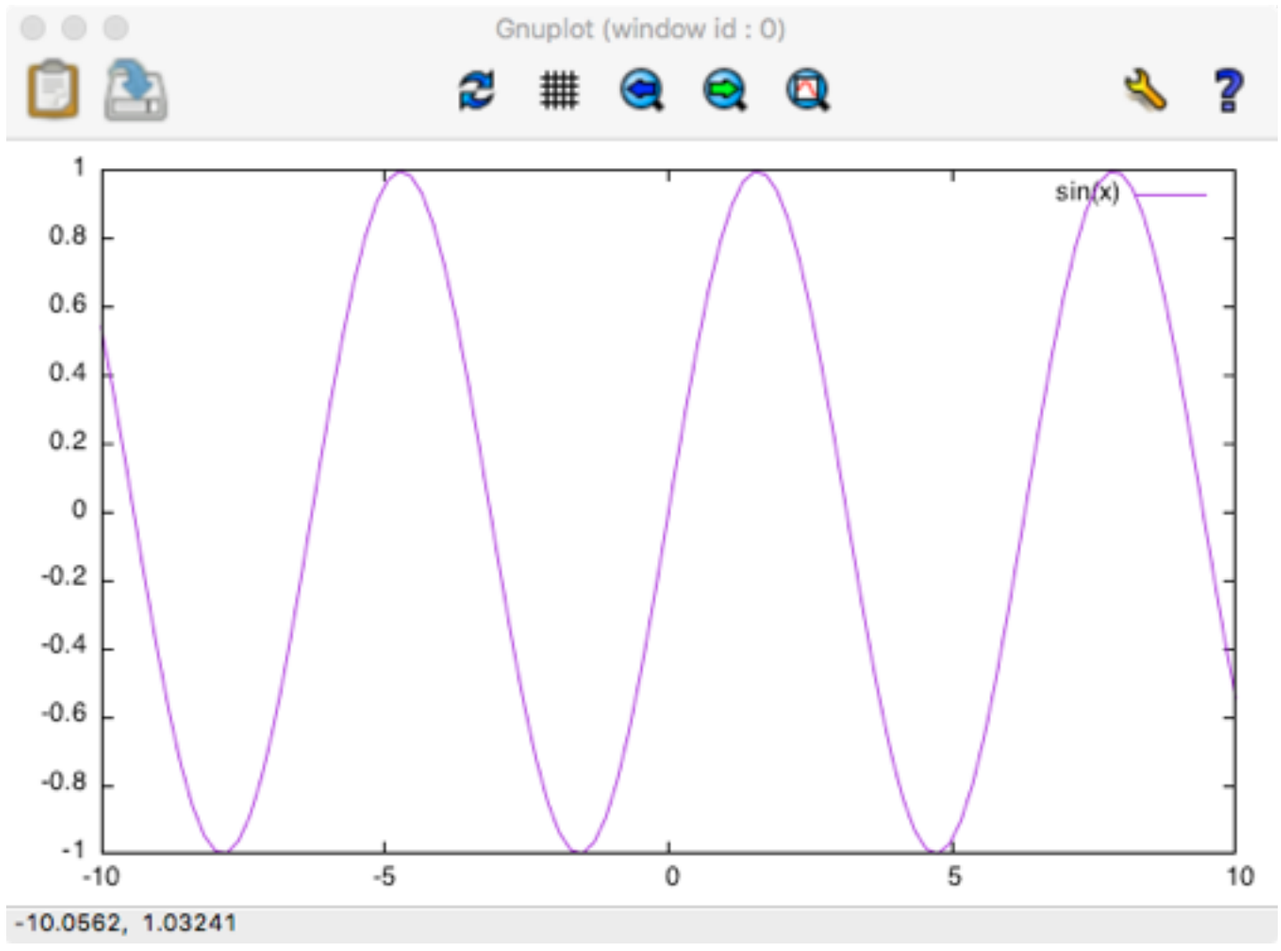
Plot di una funzione

- Decidere il “terminale”

```
set term wxt
```

- Disegnare la funzione

```
plot sin(x)
```

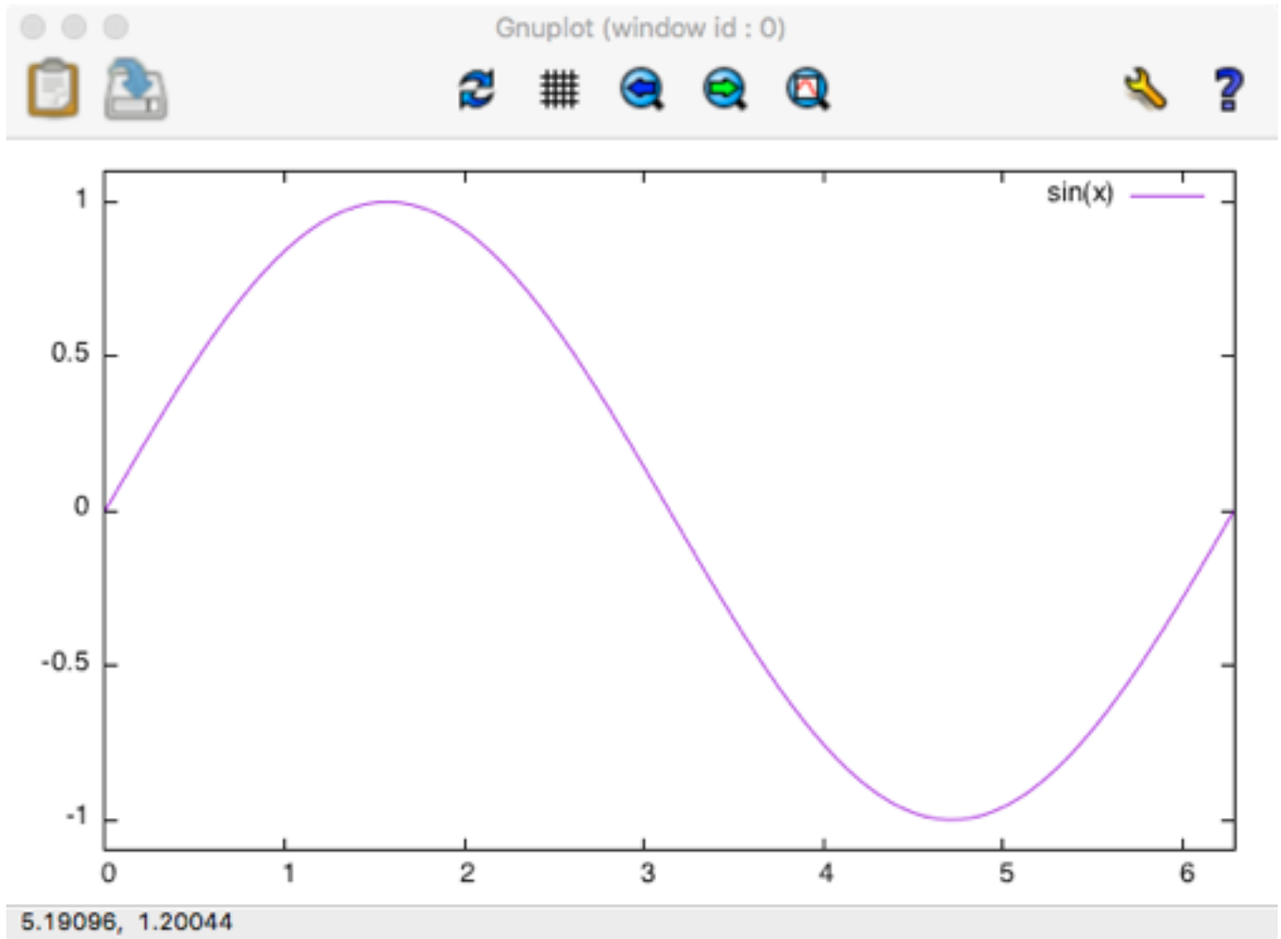


Aggiustiamo il range

- Imporre gli estremi lungo x
  `set xrange [0:2*pi]`

- e lungo y
  `set yrange [-1.1:1.1]`

- rifare il plot
  `replot`

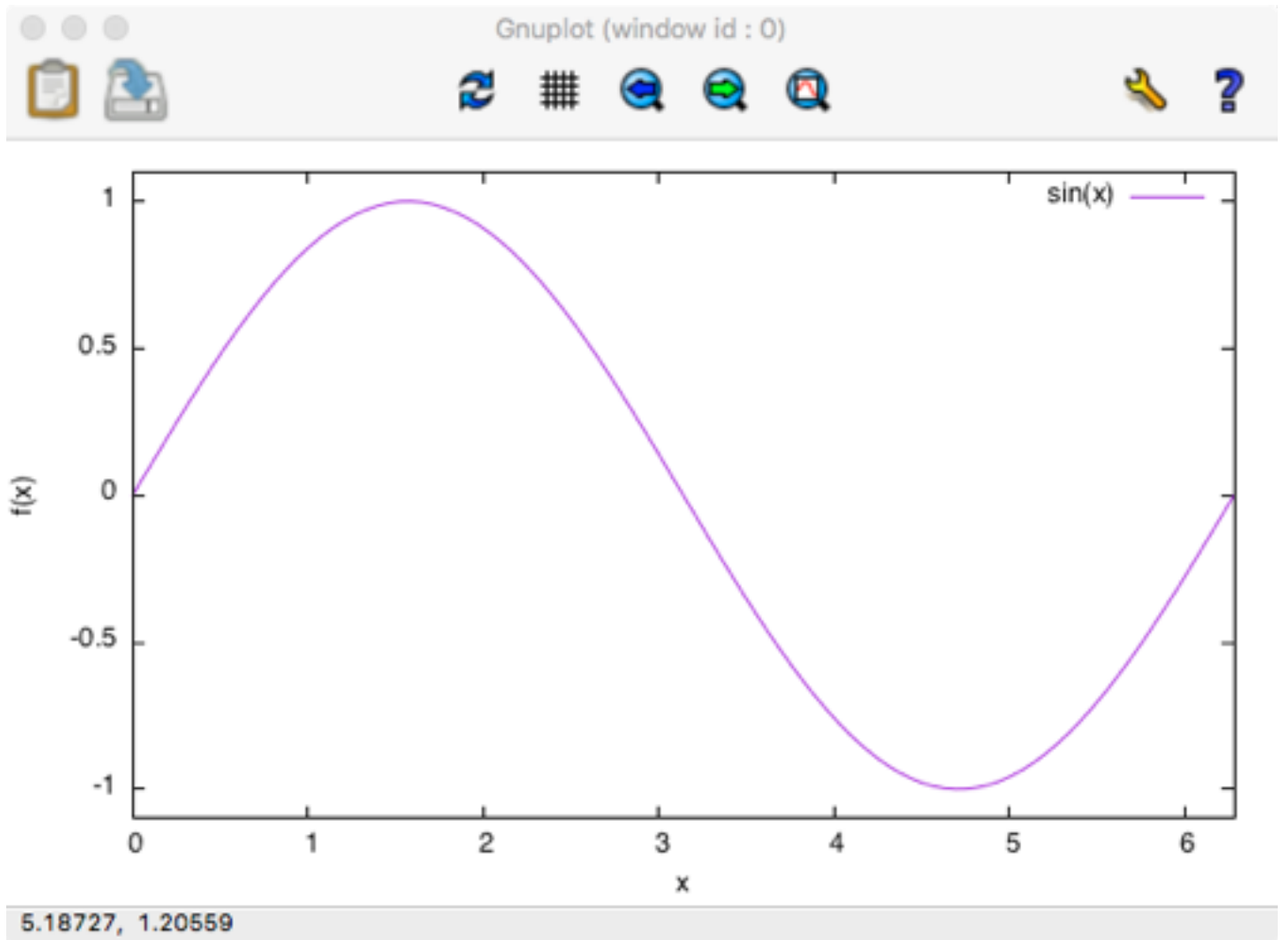


I nomi degli assi

- Label asse x
  `set xlabel “x”`

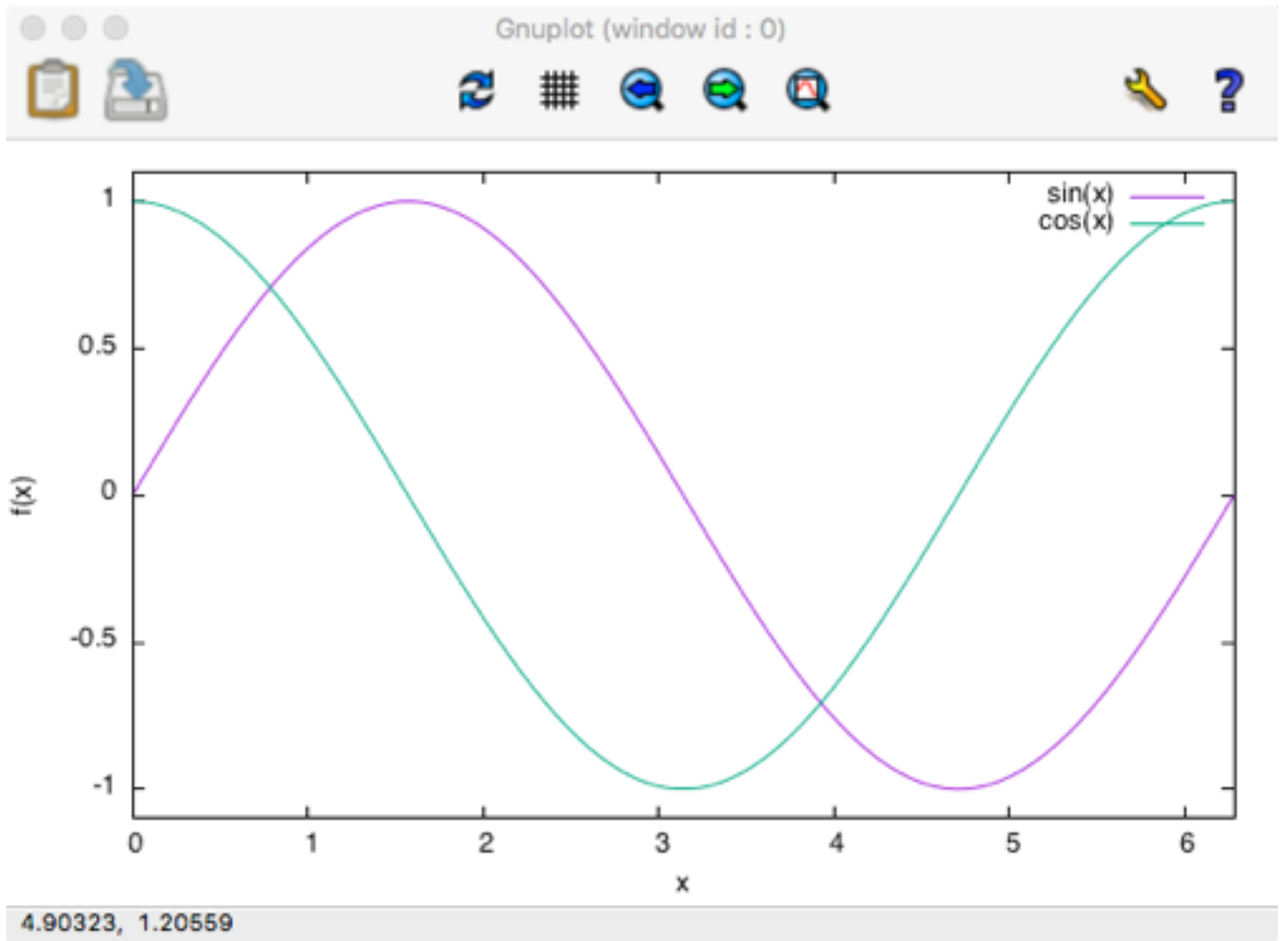
- e y
  `set ylabel “f(x)”`

- rifare il plot
  `replot`



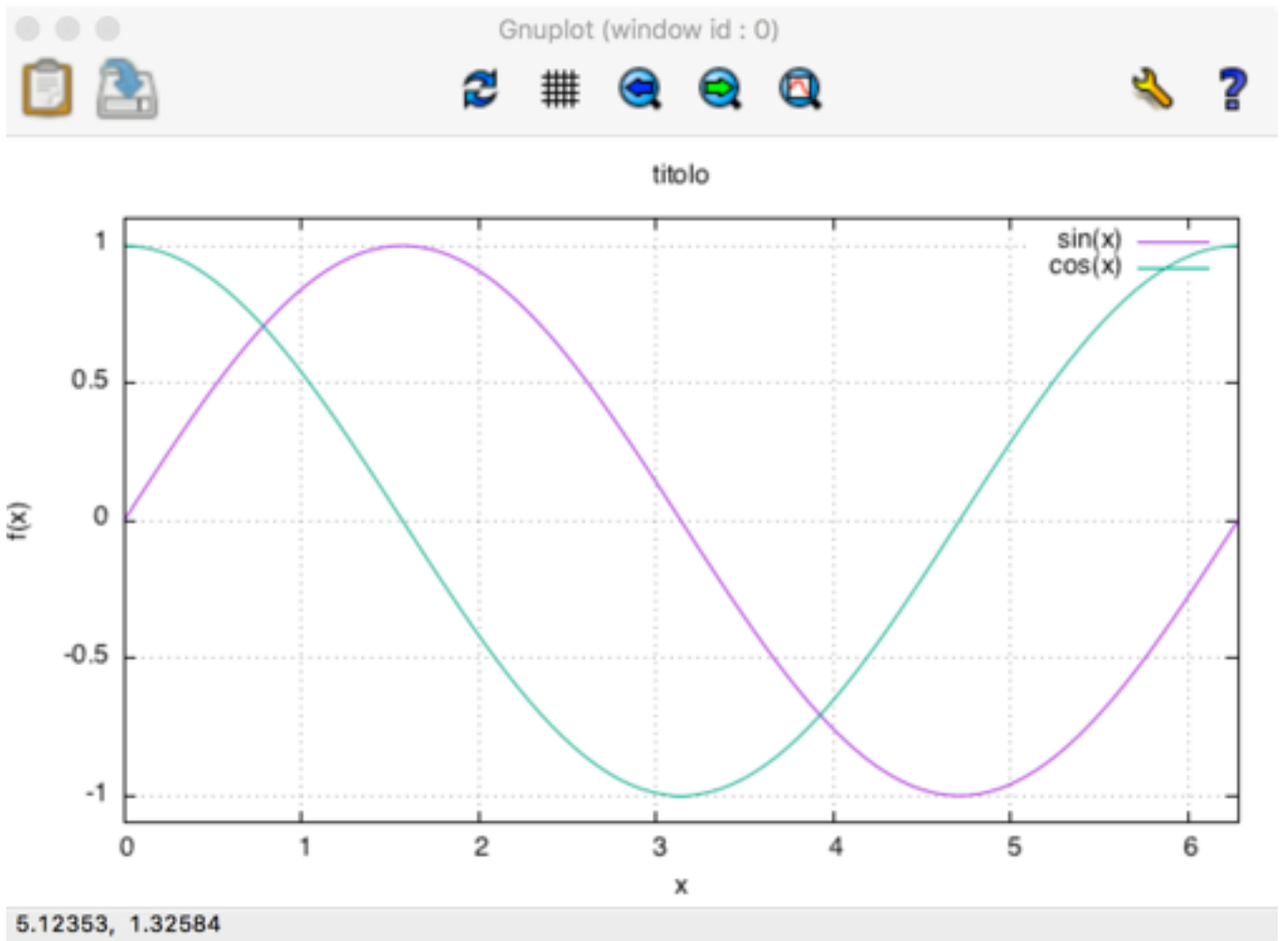
Due funzioni

```
plot sin(x), cos(x)
```



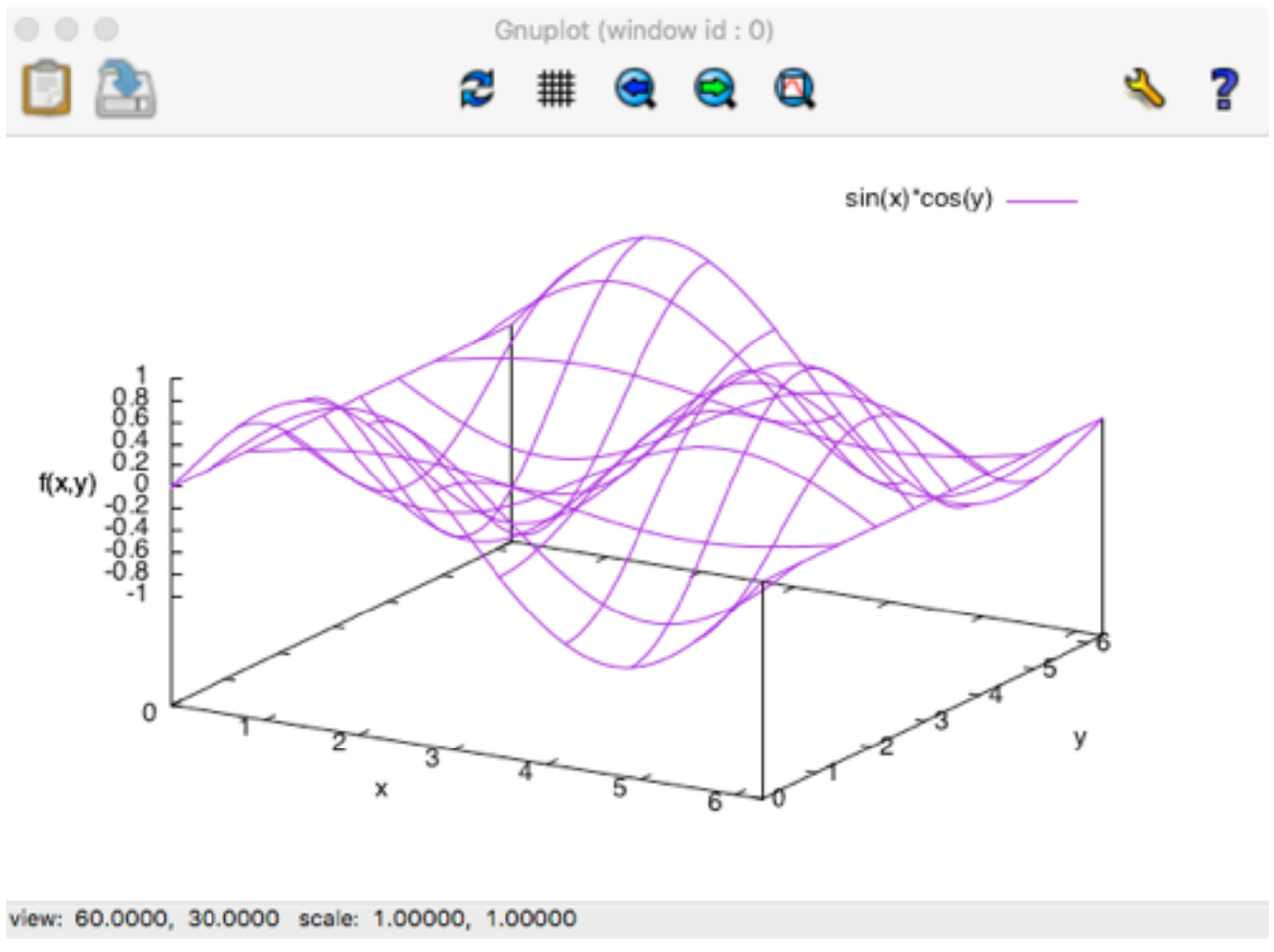
Due funzioni

```
plot sin(x), cos(x)

set grid

set title 'titolo'
```



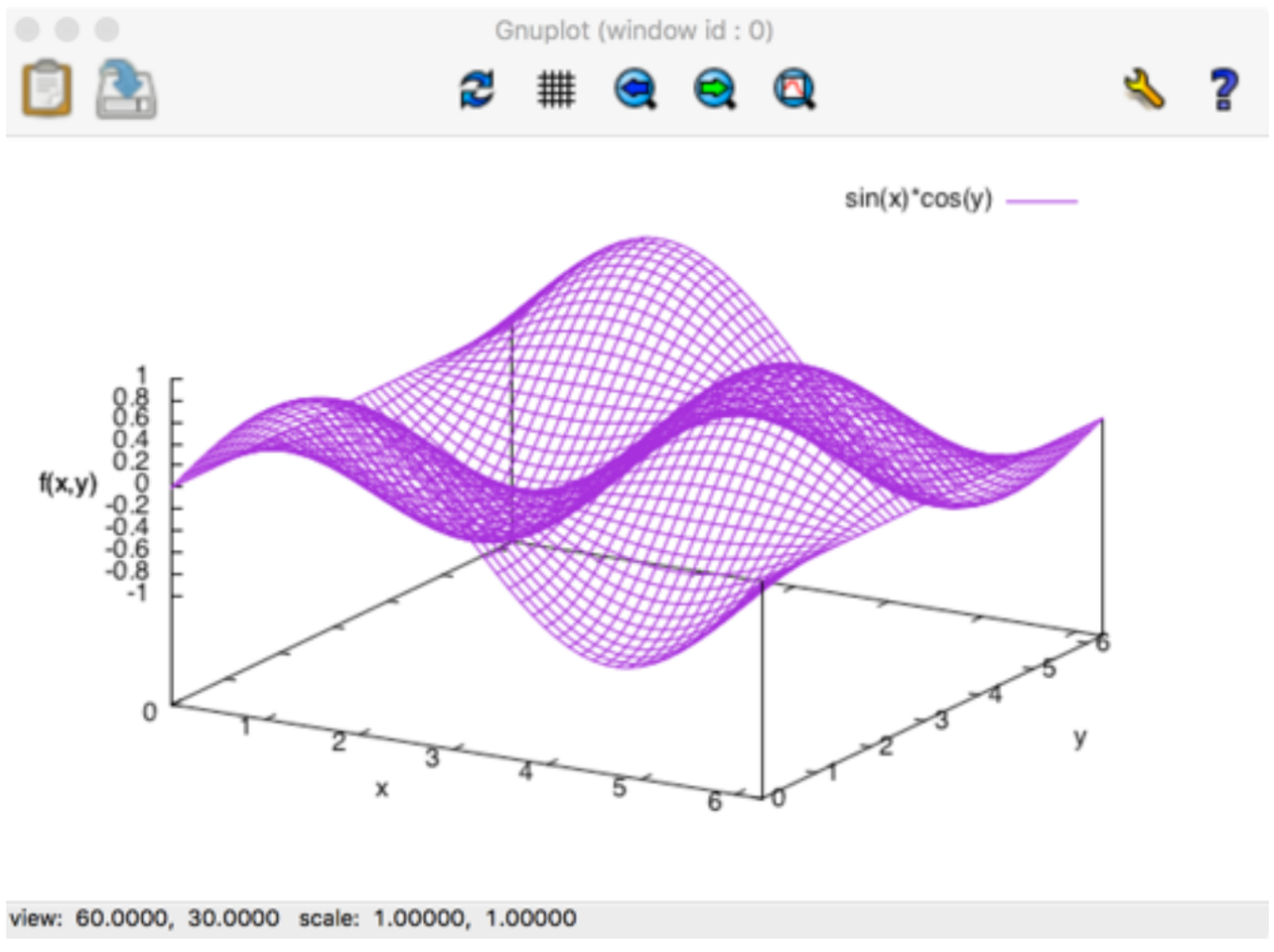
Funzione di due variabili

```
reset

set term wxt

set xrange [0:2*pi]

set yrange [0:2*pi]

set xlabel "x"

set ylabel "y"

set zlabel "f(x,y)"

splot sin(x)*cos(y)
```



Funzione di due variabili

```
reset

set term wxt

set xrange [0:2*pi]

set yrange [0:2*pi]

set xlabel "x"

set ylabel "y"

set zlabel “f(x,y)"

set isosamples 50

splot sin(x)*cos(y)
```



Fare degli script

- Si possono salvare tutti i comandi in un file di testo (ad esempio plot2D.gp)

- Eseguire lo script

```
load 'plot2D.gp'
```

Plot di un file di dati

```
reset

set term wxt

fname='dati2.txt'

set yrange [-0.1:0.6]

set xlabel "M"

set ylabel "I"

plot fname using 1:2 title ‘midpoint', \
fname using 1:3 title 'midpoint2'
```