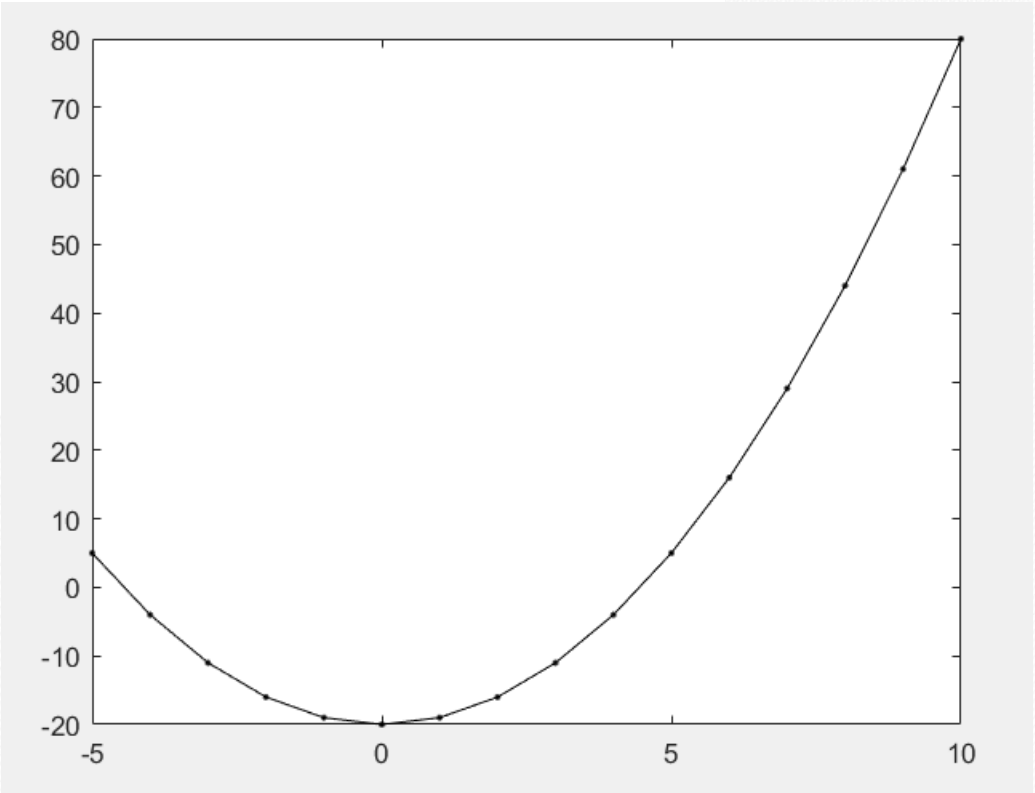
MATLAB

Essential MATLAB for Scientists

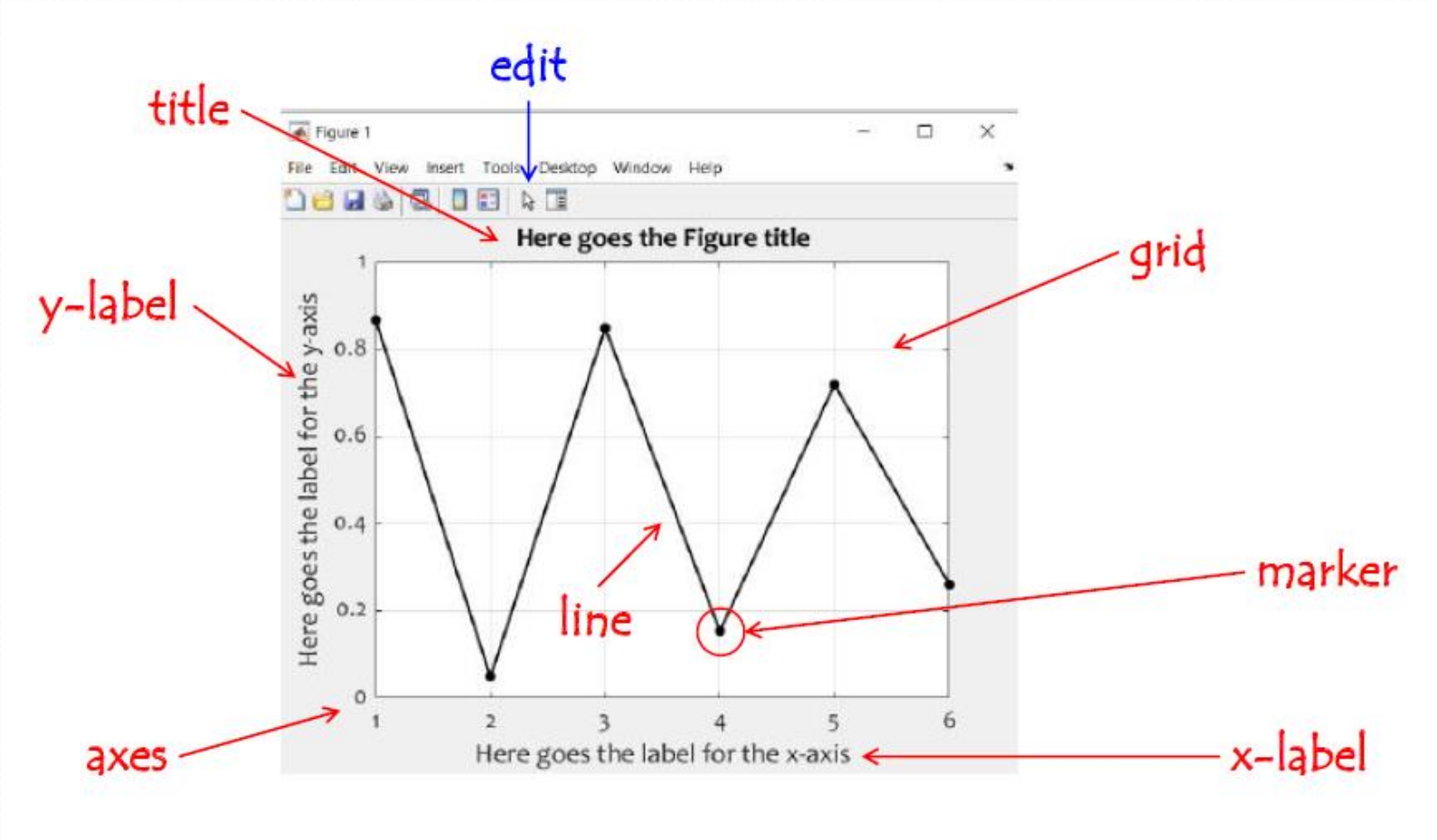
Tutorials

Plots in Matlab

```
x = -5:10; % values of the argument
y = x.^2 - 20; % values of the function
figure
plot(y)
figure
plot(x,y)
figure
plot(x,y,'k.-')
```



Plots in Matlab



Useful Commands

hold on	plots more than one thing on the same plot
grid on	activates the grid lines on the plot
fill	fills the following color on the plot

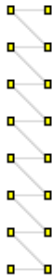
'k'	black	'r'	red	'g'	green	'b'	blue
'w'	white	'm'	magenta	'y'	yellow	'c'	cyan

Exercise

1. Plot three circles filled respectively with colors dark salmon, lavender bush and maroon

2. Reproduce the following images.

(a) Weights



(b) Zigzag

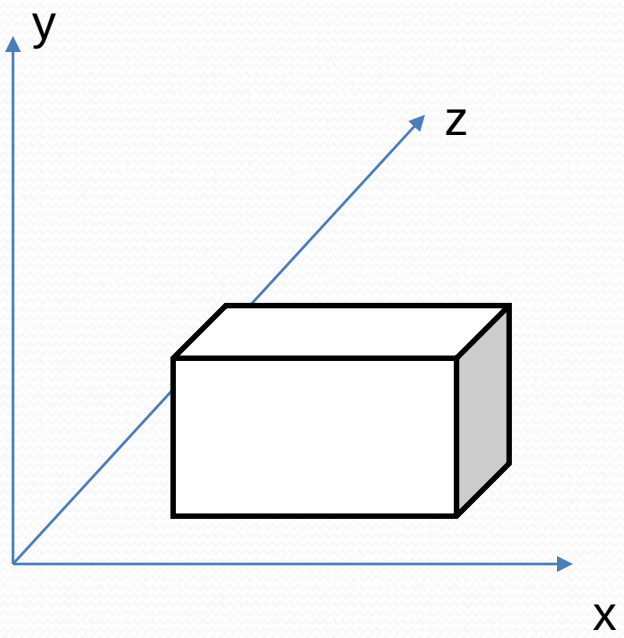
(c) Lightning bolt

(d) Christmas tree

(e) Bear's face

Exercise

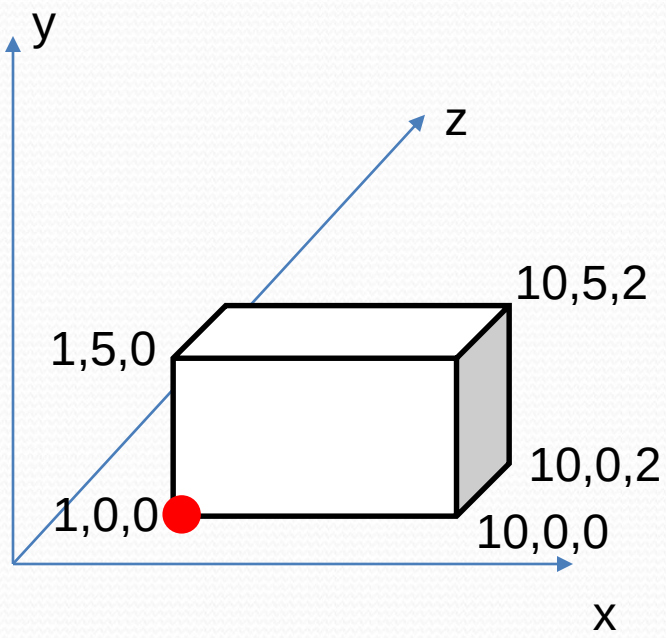
Plot a rectangular cube



Use plot3() function

Exercise

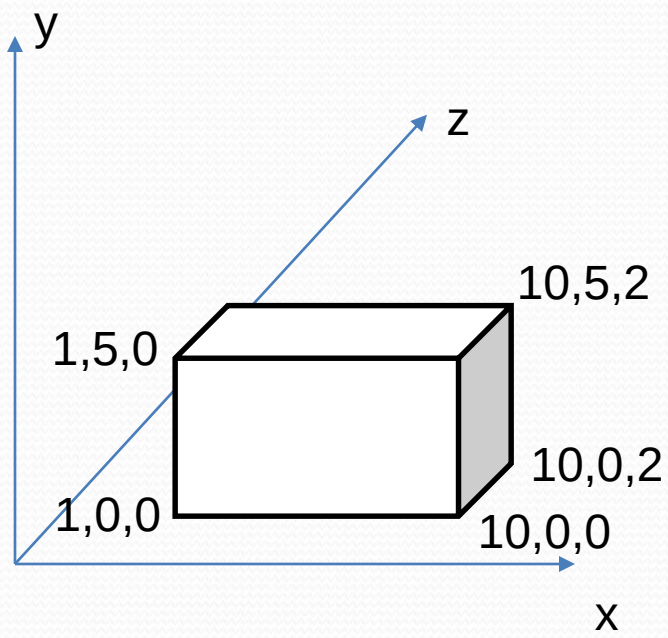
Plot 5 similar rectangular cubes (only x coordinates will change, reference ● of each cube will be separated by 12 (1st cube 1,0,0 ; 2nd cube 13,0,0 etc)



Create your own function
Use for loop

Exercise

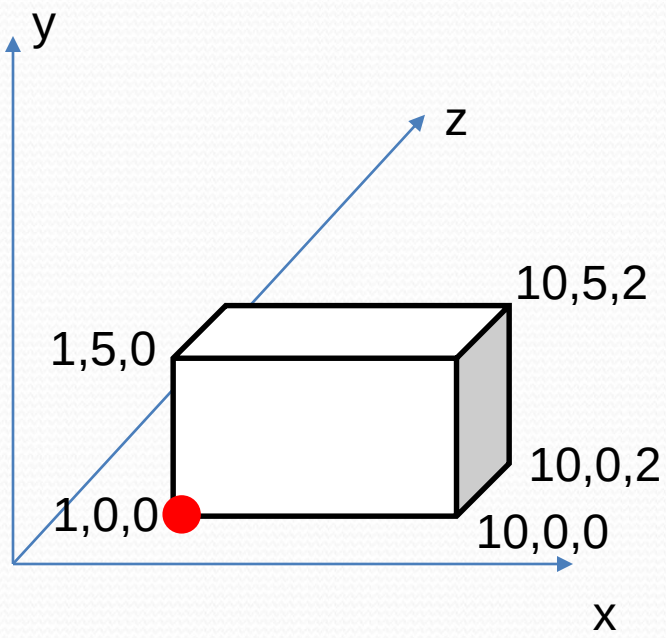
Plot a rectangular cube



Use patch() function

Exercise

Plot 5 similar rectangular cubes (only y coordinates will change, reference ● of each cube will be separated by 7 (1st cube 1,0,0 ; 2nd cube 1,7,0 etc)



Use patch() function
Use for loop

Exercise

We are going to create an interface with 2 buttons and 1 plot.

The different steps:

-Create figure

-Create panel

-Create push buttons

-Create plot

-Activate button when click on it