Introduction

In this document, the plots that should be produced in each exercise are shown. When a plot depends on some parameters which are not defined in the exercise, e.g. an exercise in which the aim is define a function, some input parameters will (arbitrarily) be chosen here, so that the results are reproducible.

In addition, since comparing plots is not a reliable way to know if the results are *exactly* equal, some output variables are stored in the "ResultsLab1.mat" fie. Their names are in **bold** within this document. Usually they have the same name as in the exercise, with the exercise number appended to them.

Recall that a *.mat* file directly loads to the workspace all the Matlab variables stored on it. To retrieve them, the *.mat* file is saved on the current folder or on any folder on the search path the *load* function is used:

```
load('ResultsLab1.mat');
```

For comparing if two variables (say `a` and `b`) have the same content, one may use:

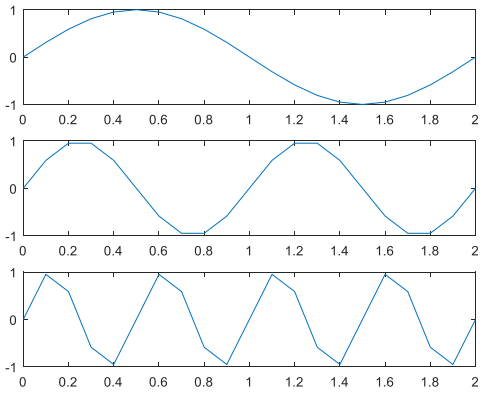
```
isequal(a,b)%0 if they are different; 1 if they have the same
%content
```

Exercise 1

Input: n0=-5; n1=5; step=0.1; w0=pi; phi=pi;

Output: **x1, ref1**

Exercise 1.1

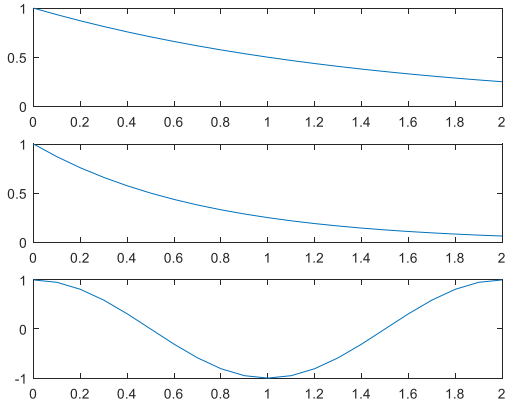


Exercise 2

Input: n0=-5; n1=5; step=0.1; b=2;

Output: **x2, ref2**

Exercise 2.1



```
Warning: Imaginary parts of complex X and/or Y arguments ignored
```

Exercise 3

Defining, for example, all the signals with respect to the same time vector **N3** (with $T_0 = -50s$ and $T = 1s$), the convolution of **deltas3** with **pulse3** is **result13**.

Needless to say, depending on the time reference used, the signals will look different.

Exercise 4

e14 contains $x_1[n] = 3\sin\left(\frac{\pi}{7}n\right) + j4\cos\left(\frac{\pi}{7}n\right), \quad 0 \le n \le 20$, and **e24** $x_2[n] = (1.1)^n \cos\left(\frac{\pi}{11}n + \frac{\pi}{4}\right), \quad 0 \le n \le 50$, employing the so-called sinusoidal form. On the other hand, **x14** and **x24** are, respectively, the signal vectors obtained using by complex exponentials.