

Exercise 3

Convolution

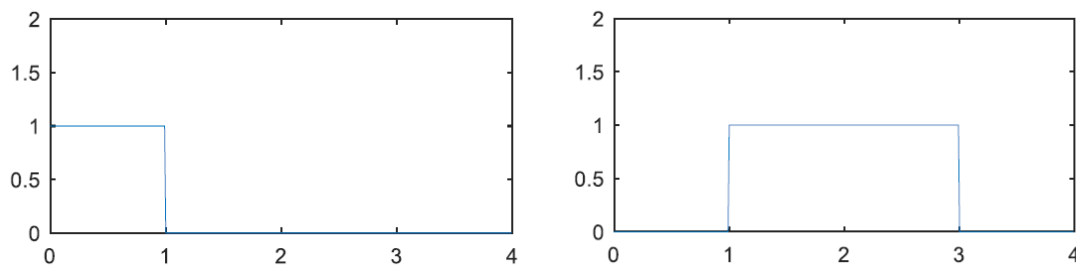
Part 1:

Consider two input signals:

$$h(t) = \begin{cases} 1 & 0 < t < 1 \\ 0 & 1 < t < 4 \end{cases}$$

$$x(t) = \begin{cases} 0 & 0 < t < 1 \\ 1 & 1 < t < 3 \\ 0 & 3 < t < 4 \end{cases}$$

as shown in the figure below.



Write a Matlab function, named “convolution.m” to generate the signals x(t), h(t), and y(t) = x(t)* h(t), where y(t) is obtained by convolving the x(t) with h(t).

Part 2:

Write a Matlab test bench script to plot the signals: x(t), h(t), and y(t).