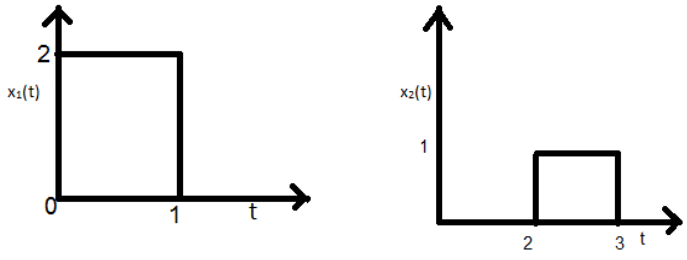
1) Find the response of the system when a signal is passed through
   a) Low pass filter
   b) High pass filter

   Note: Use Mat Lab to find the response

2) Check whether the systems are causal or stable or both using the impulse response of the system
   a) $H(t) = e^{-4t}u(t-2)$
   b) $H(t) = e^{-6|t|}$
   c) $H(t)= e^{2t}u(-1-t)$
   d) Consider an LTI system with input and output related by $y(t)=\int_0^t e^{-a} x(t-a)da$

3) Using the convolution integral find the response of an LTI system whose impulse response is given by h(t) = u(t), when the applied input signal is u(t). Also find whether the system is stable using the impulse response of the system

4) Find the convolution of the below mentioned signals using traditional approach and also using properties of LTI system



5) Given $h(t) = e^{\alpha t}u(t) + e^{\beta t}u(-t)$. For what values of α and β the system is stable