I. Preparation

1) Evaluate the following convolutions both in discrete time and continuous time.
   
a) \( y[n] = u[n] \ast u[n - 3] \)

b) \( y[n] = \left( \frac{1}{2} \right)^n u[n - 2] \ast u[n] \)

c) \( y[n] = (-1)^n \ast 2^n u[-n + 2] \)

d) \( y(t) = (u(t) - u(t - 2)) \ast u(t) \)

e) \( y(t) = (e^{-t} u(t)) \ast (e^{-3t} u(t)) \)

2) Find the convolution of the signals \( x(t) \) and \( y(t) \) by hand.

II. Experimental Work

1) Write matlab programs that find the result of the convolutions in preparations 1 and 2. Compare them with your hand results.

Note: Use the matlab command conv to evaluate the convolution of two signals.