
ECE250: Signals and Systems

Quiz3

1. [CO1] Consider the evaluation of

$$y[n] = x_1[n] * x_2[n] * x_3[n],$$

where $x_1[n] = (0.5)^n u[n]$, $x_2[n] = u[n + 3]$ *and* $x_3[n] = \delta[n] - \delta[n - 1]$

(a) Evaluate the convolution $x_1[n] * x_2[n]$.

(b) Convolve the result of part (a) with $x_3[n]$ in order to evaluate $y[n]$.

(c) Evaluate the convolution $x_2[n] * x_3[n]$.

(d) Convolve the result of part (c) with $x_1[n]$ in order to evaluate $y[n]$.