ECE 2200 **HOMEWORK ASSIGNMENT V** **Fall 2019**

1. From the book, Problem P-5.3.

2. From the book, Problem P-5.7. In part (c), assume $\alpha \neq 1$.

3. From the book, Problem P-5.10.

4. From the book, Problem P-5.14.

5. From the book, Problem P-5.18.

6. Compute and sketch the convolution $y[n] = x_1[n] * x_2[n]$ when

$$x_1[n] = \begin{cases} 1 & 0 \leq n < 5 \\ 0 & \text{otherwise} \end{cases}$$

and

$$x_2[n] = u[n] = \begin{cases} 1 & n \geq 0 \\ 0 & \text{otherwise.} \end{cases}$$

7. Compute the output signal $y[n]$ of the FIR system defined by

$$y[n] = \frac{1}{4} \sum_{k=0}^{3} x[n-k]$$

when the input signal is

$$x[n] = 7 \cos(n\pi/2) \ .$$