Introduction to DSP: Systems - Assignment

1. Compute of the output of an LTI system with the impulse response

$$h[n] = \begin{cases} 0, & n < 0 \\ 3, & n = 0 \\ 2, & n = 1 \\ 1, & n = 2 \\ 0, & n > 2 \end{cases}$$

for the following inputs.

(a) $x[n] = \delta[n] + \delta[n-3]$

(b) $x[n] = u[n]$

(c) $x[n] = \sin(0.5\pi n)\, u[n]$

(d) $x[n] = 1, \forall n$

(e) $x[n] = (0.5)^n, \forall n$

(f) $x[n] = (0.5)^n\, u[n], \forall n$