PROBLEM:

R filter are
$$\{b_k\}$$

x[n]

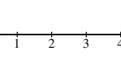
FIR FILTER $\{b_k\}$

(a) If the filter coefficients of an FIR filter are $\{b_k\} = \{0, 1, 0, -2\}$, make a plot of the output when the input is the unit step signal: $x[n] = u[n] = \begin{cases} 0 & \text{for } n < 0 \\ 1 & \text{for } n \ge 0 \end{cases}$

y[*n*]

Label Carefully Plot zero values also





onse of a different FIR filter is
$$\mathcal{H}(\hat{\omega}) = (2 - 2\cos(\hat{\omega}))e^{-j3\hat{\omega}}$$

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$$\mathcal{H}(\hat{\omega}) = (2-2\cos(\hat{\omega}))e^{-j3\hat{\omega}}$$
 If the input signal is $x[n] = 5 + 1\cos(\pi n/4 + 0.3\pi)$ for $-\infty < n < \infty$,

If the input signal is
$$x[n] = 5 + 1\cos(\pi n/4 + 0.3\pi)$$
 for $-\infty$ < determine a simple mathematical expression for the output signal $y[n]$.

$$\mathcal{H}(\hat{\omega}) = (2 - 2\cos(\hat{\omega}))e^{-J3\omega}$$
$$+ 1\cos(\pi n/4 + 0.3\pi) \quad \text{for } -\infty < n < \infty$$