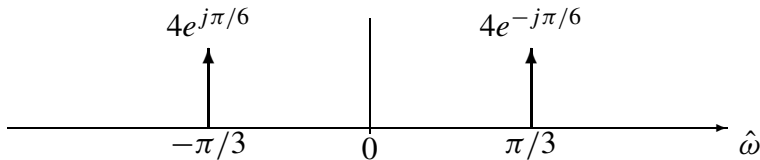


PROBLEM:

An FIR filter is characterized by the following frequency response:

$$\mathcal{H}(\hat{\omega}) = e^{-j\hat{\omega}} \cos(\hat{\omega})$$

- (a) If the input to the filter is a signal with the following spectrum, determine the output, $y[n]$ for $-\infty < n < \infty$.



- (b) Determine the difference equation that relates the input and output.