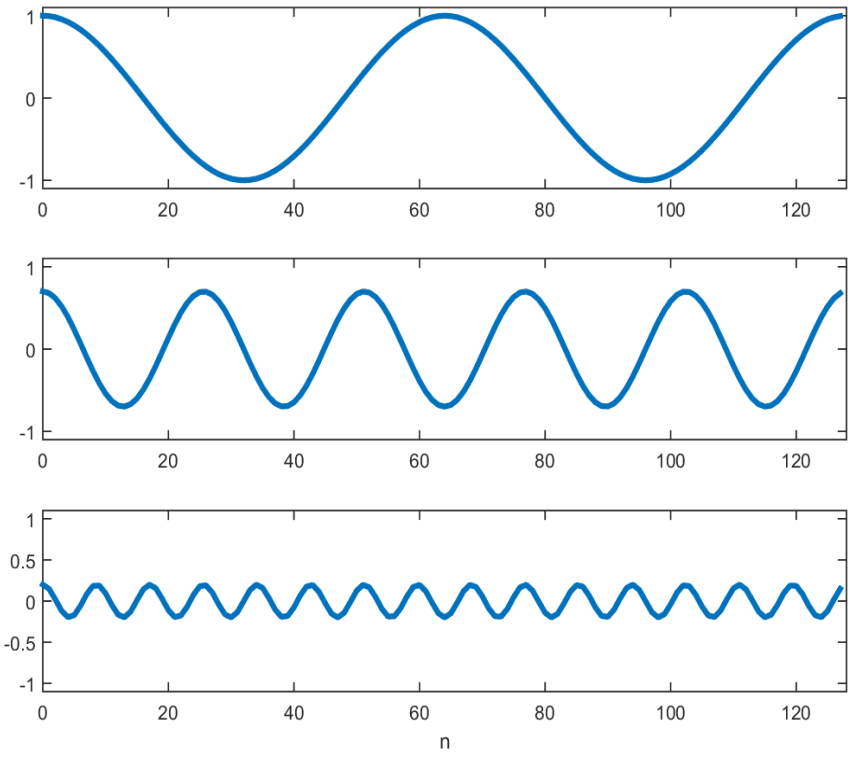
5.3 QUIZ QUESTION 1 (1/1 point)

Suppose that cosine waves with unit amplitude but varying frequency are input to a linear time invariant filter. The outputs in response to three cosine waves with different frequencies are shown below.



Assume that the amplitude of the output for intermediate frequencies changes smoothly and monotonically.

Based on these observations, over the frequency range between the lowest and highest frequency shown, the frequency response has

- (●) a low pass characteristic. ✔
- ( ) a band pass characteristic.
- ( ) a high pass characteristic.

5.5 Lab 3 - Frequency Response
Lab due Nov 16, 2015 at 15:30 UTC

- Topic 6: The Discrete Fourier Transform
- MATLAB download and tutorials
- MATLAB Sandbox

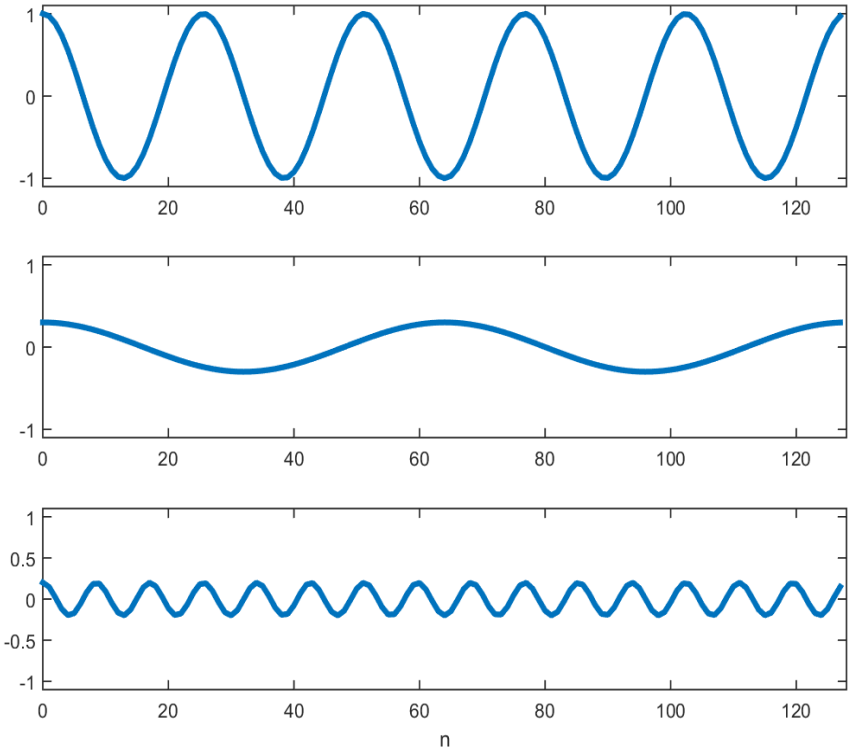
EXPLANATION

The amplitude of the output is large for low frequency input, small for high frequency input and has an intermediate value for intermediate frequencies. Assuming the frequency response changes smoothly and monotonically, the filter passes low frequencies, but blocks high frequencies. Thus, it is a low pass filter.

You have used 1 of 1 submissions

5.3 QUIZ QUESTION 2 (1/1 point)

Suppose that cosine waves with unit amplitude but varying frequency are input to a linear time invariant filter. The outputs in response to three cosine waves with different frequencies are shown below.



Assume that the amplitude of the output for intermediate frequencies changes smoothly and monotonically.

Based on these observations, over the frequency range between the lowest and highest frequency shown, the frequency response has

- a low pass characteristic.
- a band pass characteristic. ✔
- a high pass characteristic.

EXPLANATION

The amplitude of the output is large for intermediate frequency input, but small for low and high frequency inputs. Thus, it is a band pass filter.

You have used 1 of 1 submissions