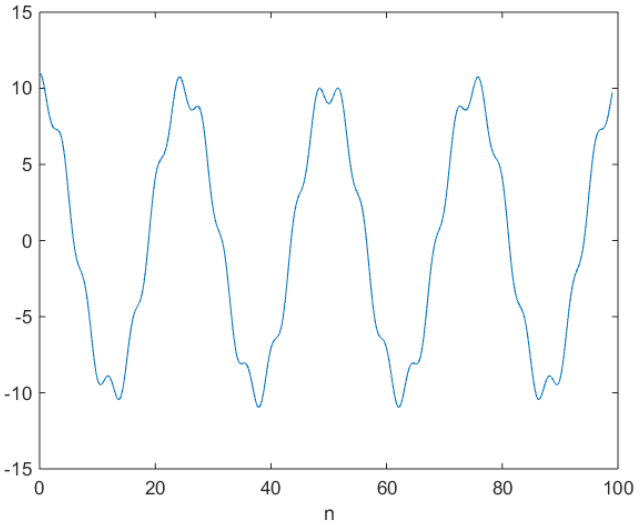
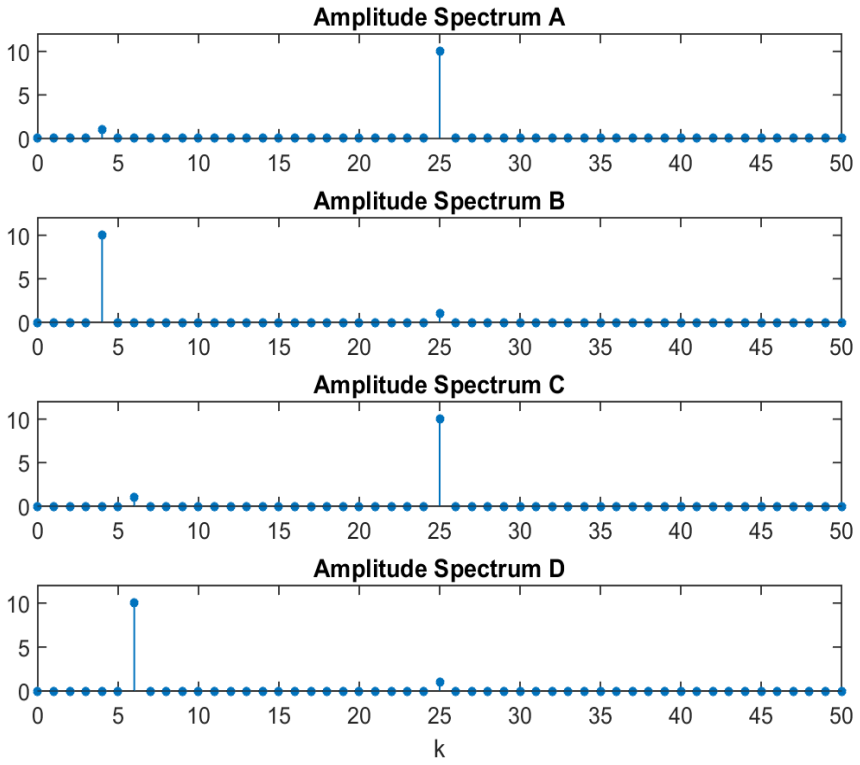
3.4 QUIZ QUESTION 1 (1 point possible)

Consider the following discrete time signal with 100 samples shown below.



Which of the plots below shows the corresponding Fourier series amplitude spectrum?



- MATLAB Sandbox

- Amplitude Spectrum A ✖
- Amplitude Spectrum B ✔
- Amplitude Spectrum C
- Amplitude Spectrum D

Incorrect: $A_4 = 1, A_{25} = 10$

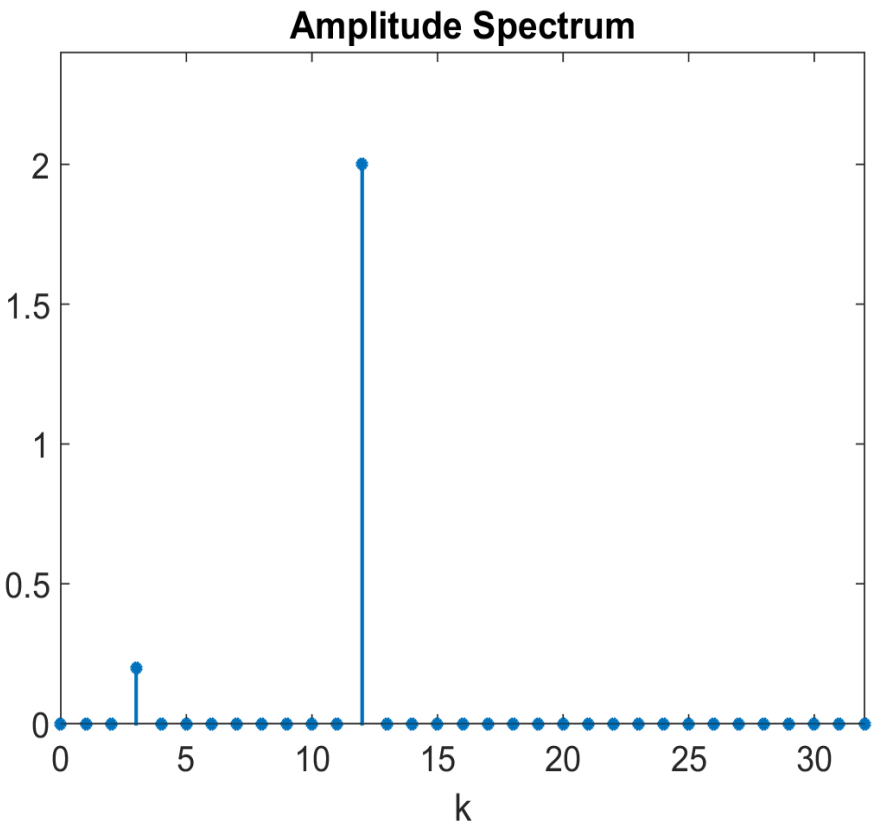
EXPLANATION

The signal consists of a large low frequency cosine that oscillates 4 times over the 100 samples plus a smaller high frequency cosine that oscillates 25 times over the 100 samples.

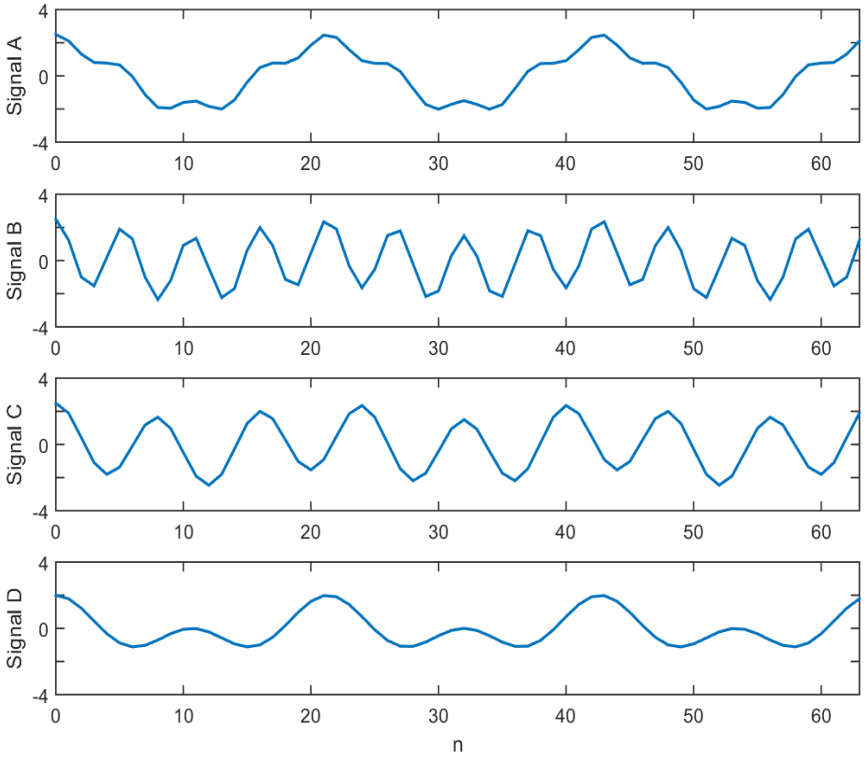
You have used 2 of 2 submissions

3.4 QUIZ QUESTION 2 (1/1 point)

Consider a discrete time signal with 64 samples, whose the amplitude spectrum is shown below.



Which of the plots show the corresponding signal?



- Signal A

- (•) Signal B ✔
- ( ) Signal C
- ( ) Signal D

Correct: $0.5\cos(2\pi\frac{3}{64}n) + 2\cos(2\pi\frac{12}{64}n)$

EXPLANATION

The signal contains a large frequency component at k = 12, which oscillates up and down 12 times over the 64 samples. Only Signal B displays this large frequency component.

You have used 1 of 2 submissions