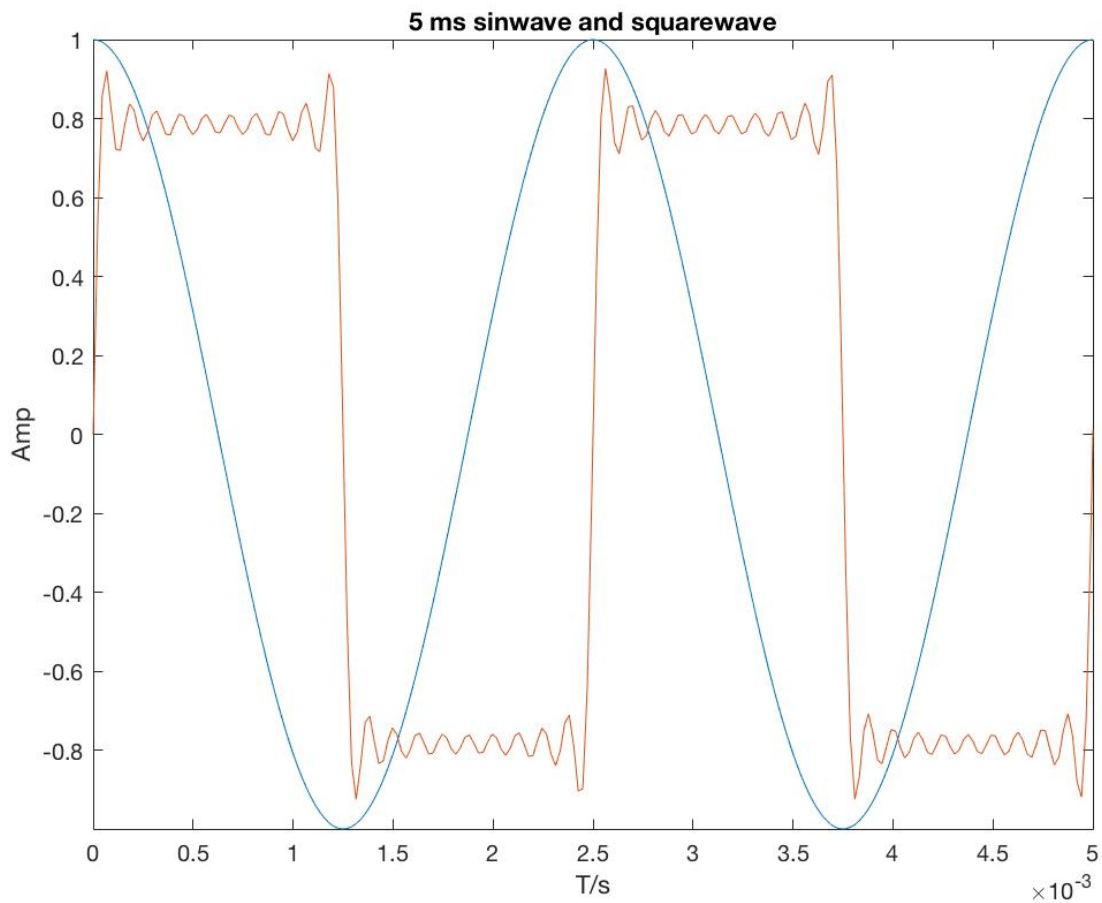


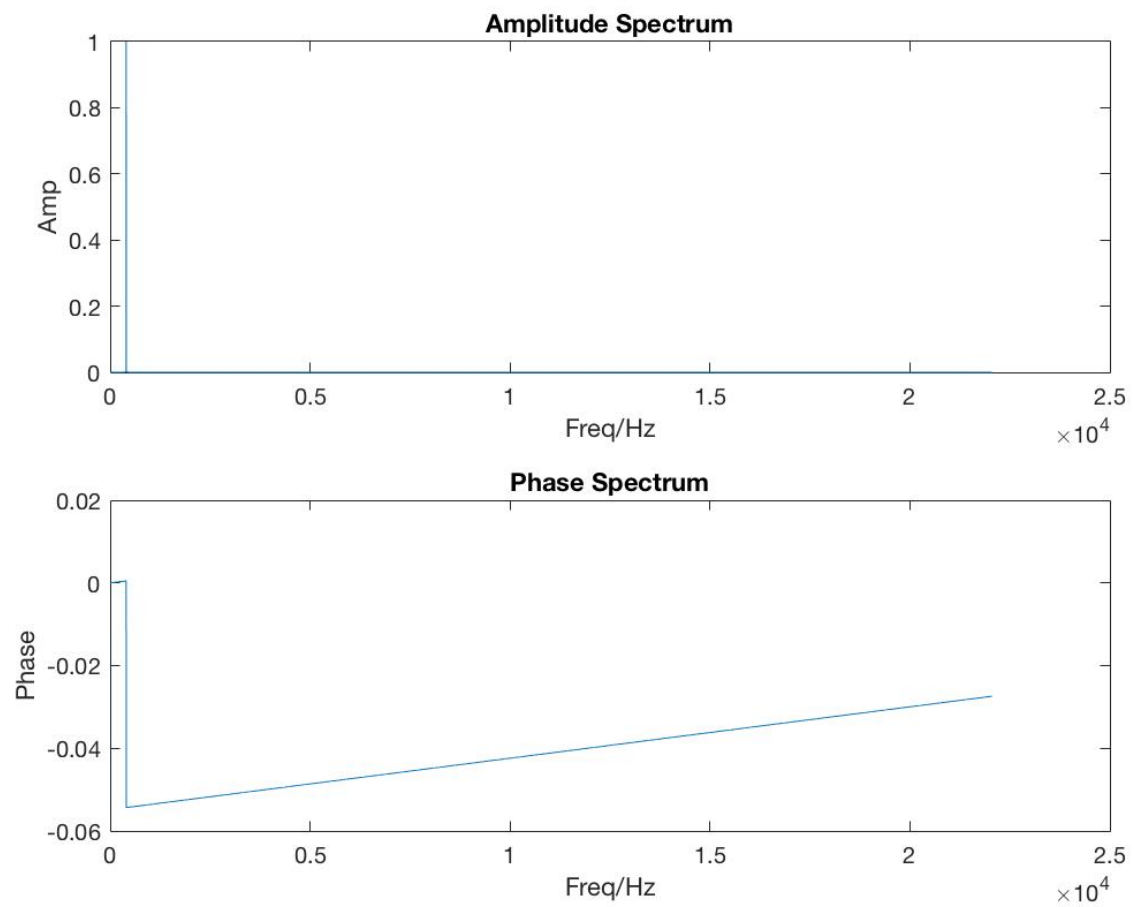
Fourier Analysis

Question 1:

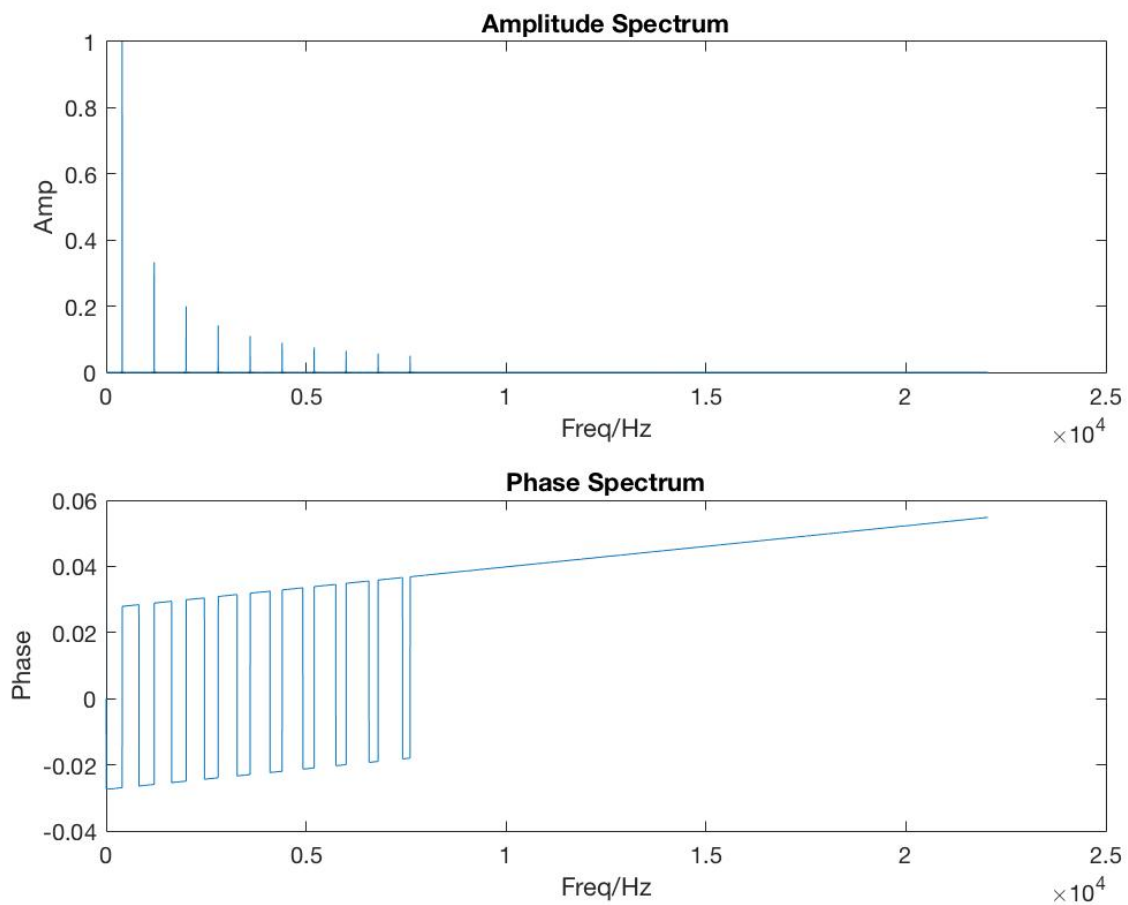


Question 3:

Sin wave spectrum



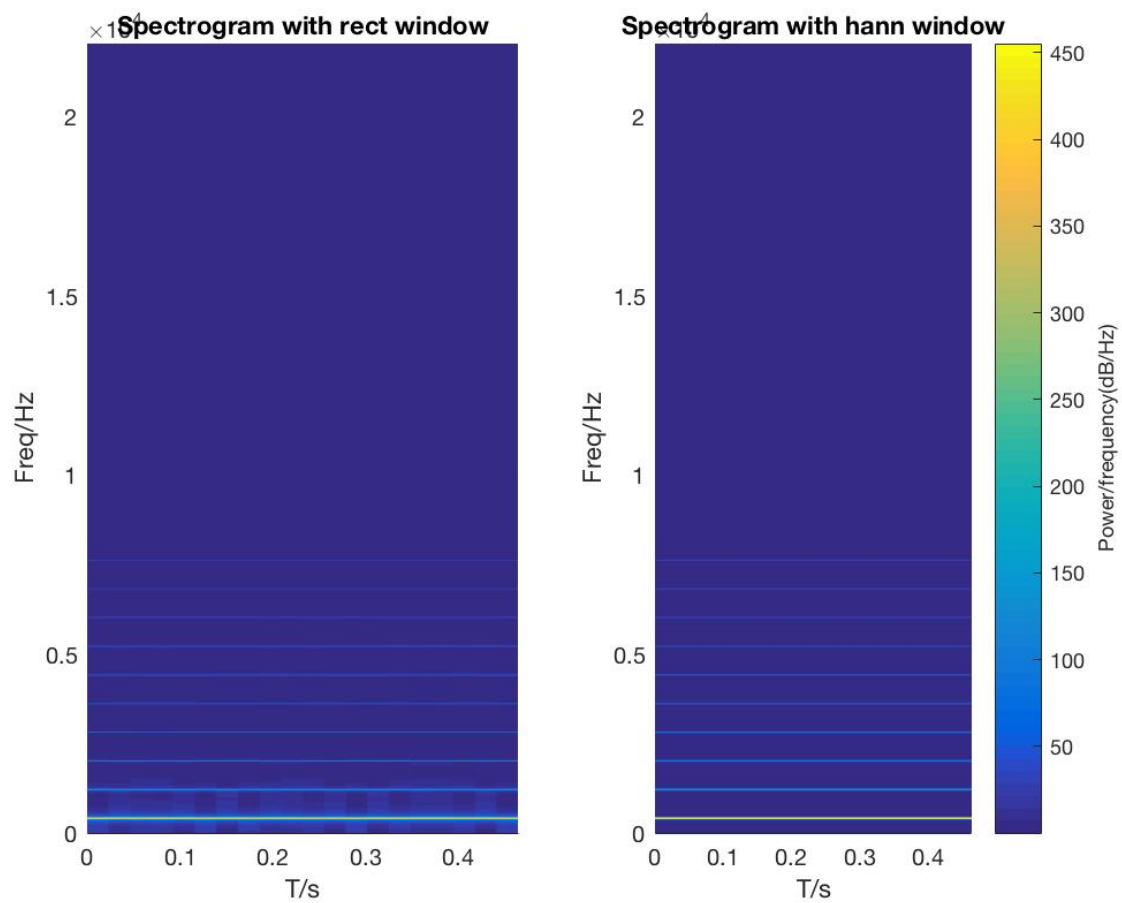
Square Wave Spectrum



Frequency resolution: $F_s/N = 2\text{Hz}$

The frequency resolution will increase due to zero padding.

Question 4:



We can see from the spectrogram that rectangular window have more frequency leakage then hann window generated spectrogram.

Building in function

