

Problem 2:

a.

```
load('p_11_2.mat');

Fs = 1000; % Sampling frequency
T = 1/Fs; % Sample time
L = length(Signal); % Length of signal
t = (0:L-1)*T; % Time vector
% Sum of a 50 Hz sinusoid and a 120 Hz sinusoid

NFFT = 2^nextpow2(L); % Next power of 2 from length of y
Y = fft(Signal(:,2),NFFT)/L;
f = Fs/2*linspace(0,1,NFFT/2+1);
c=conj(Y);
Py=Y.*c;

% Plot single-sided amplitude spectrum.
figure;plot(Py) ;
title('Power Spectrum of y(t)');
xlabel('Frequency (Hz)');
ylabel('|Y(f)|');
```

b.

Run wavemenu. Follow the steps to denoise the signal.

c.

```
AVR = sum(abs(Signal(:,2)))/length(Signal);
```