**Lab 3 Assignment**

**Matlab**

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**Problem 1**

Code:

Text, letter

Description automatically generated

Figure:

Chart, histogram

Description automatically generated

**Problem 2**

**a)**

t = linspace (0,50,50000)

x = exp(-2\*t);

figure;

plot (t,x)

Chart

Description automatically generated

**b)**

X = fftshift(fft(x));

Fourier Transform = 1/(2+jw)

**c)**

Xmag = abs (X);

Fvec = linspace (-500,500,50000);

figure;

plot (Fvec,Xmag)

**Chart

Description automatically generated**

**d)**

Xphase = angle (X);

Fvec = linspace (-500,500,50000);

figure;

plot(Fvec,Xphase)

Chart, line chart

Description automatically generated

**e)** Zero (Decaying signal)