Lab 3 Assignment

Matlab

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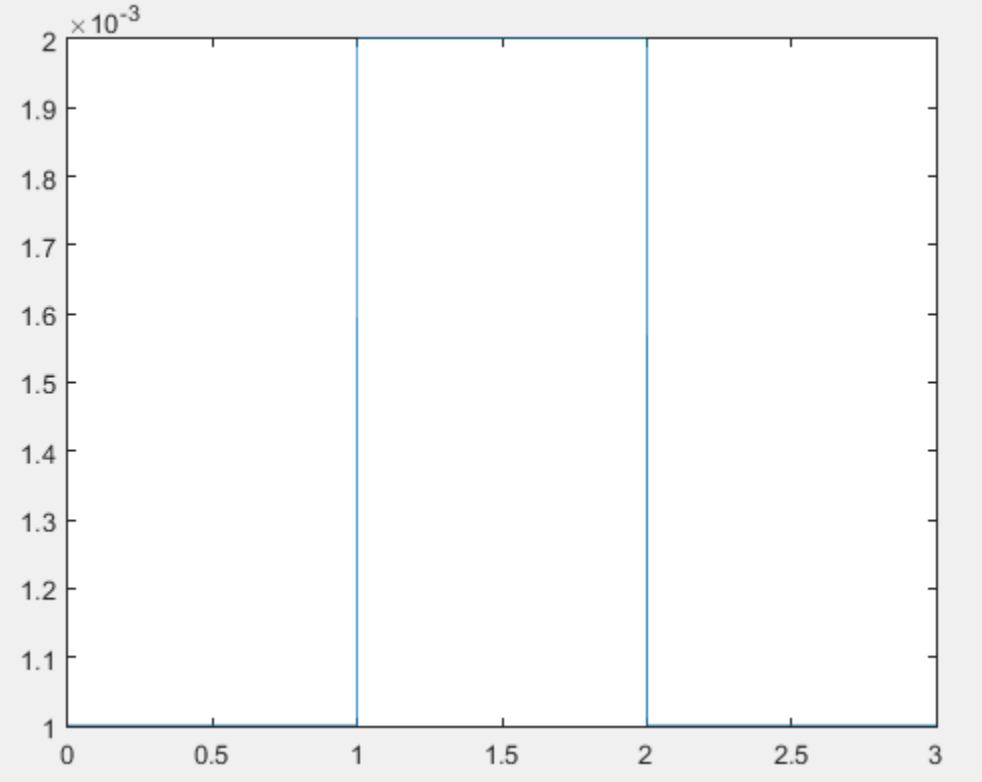
Problem 1

Code:

```
X1 = ones (1,2000);
Y1 = 1;
Y2 = zeros(1,1000);
Y3 = 1;
X2 = [ Y1 Y2 Y3 ];
X = (1/1000) * conv(X1,X2);
t = linspace(0,3,3001);
plot (t,X)
```

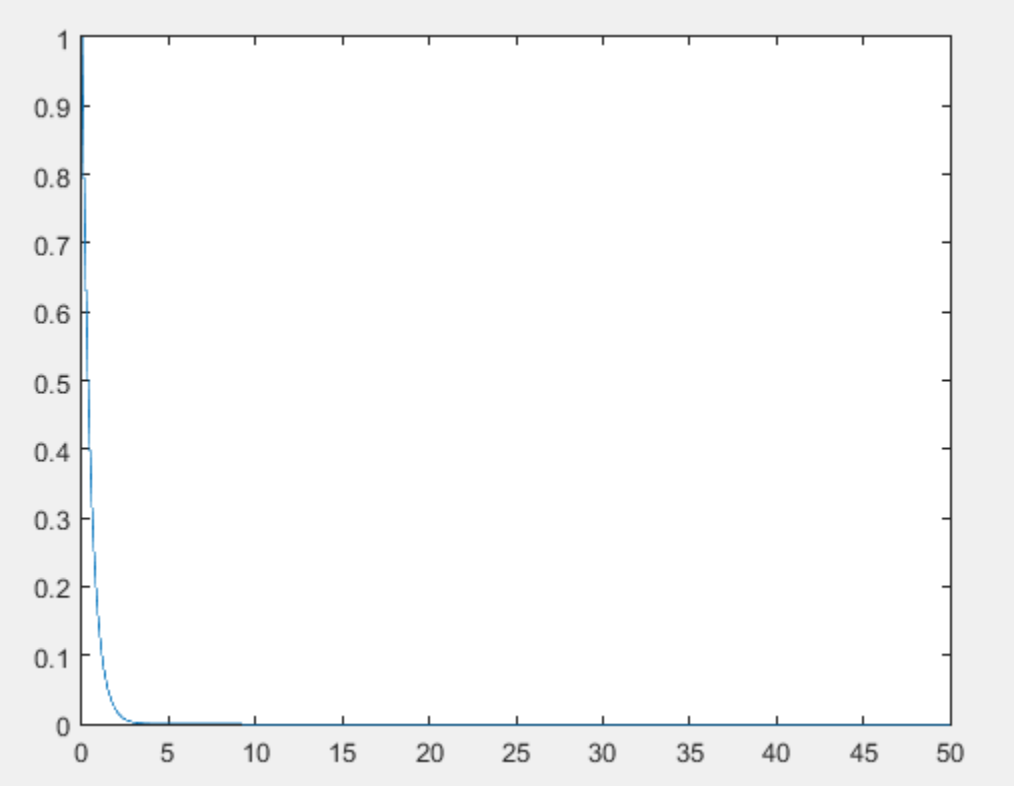
Figure:



Problem 2

a)

```
t = linspace (0,50,50000)
x = exp(-2*t);
figure;
plot (t,x)
```



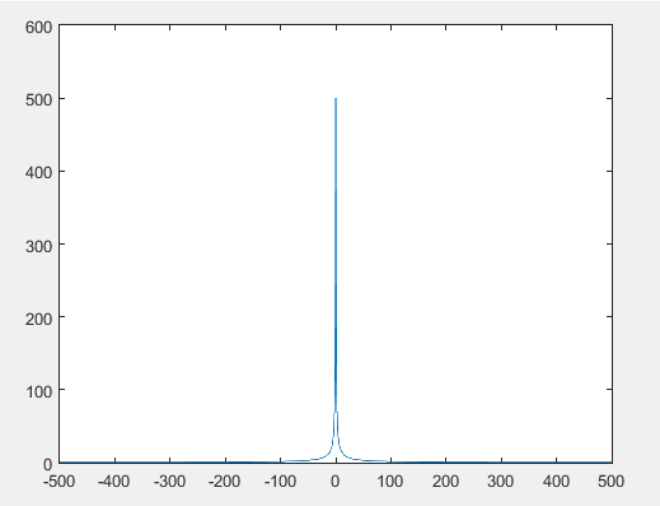
b)

```
X = fftshift(fft(x));
```

Fourier Transform = 1/(2+jw)

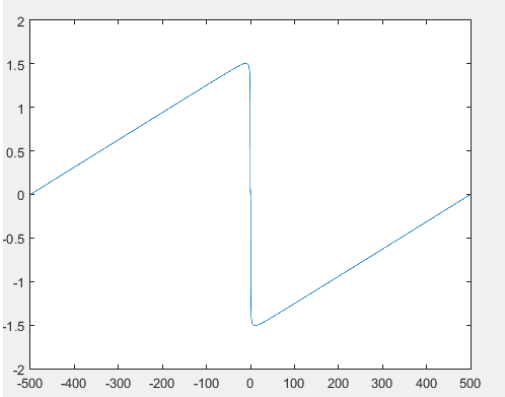
c)

```
Xmag = abs (X);
Fvec = linspace (-500,500,50000);
figure;
plot (Fvec,Xmag)
```



d)

```
Xphase = angle (X);
Fvec = linspace (-500,500,50000);
figure;
plot(Fvec,Xphase)
```



e) Zero (Decaying signal)