Signals and Systems Assignment Lab #3

By: Adel Ashraf Mohammed

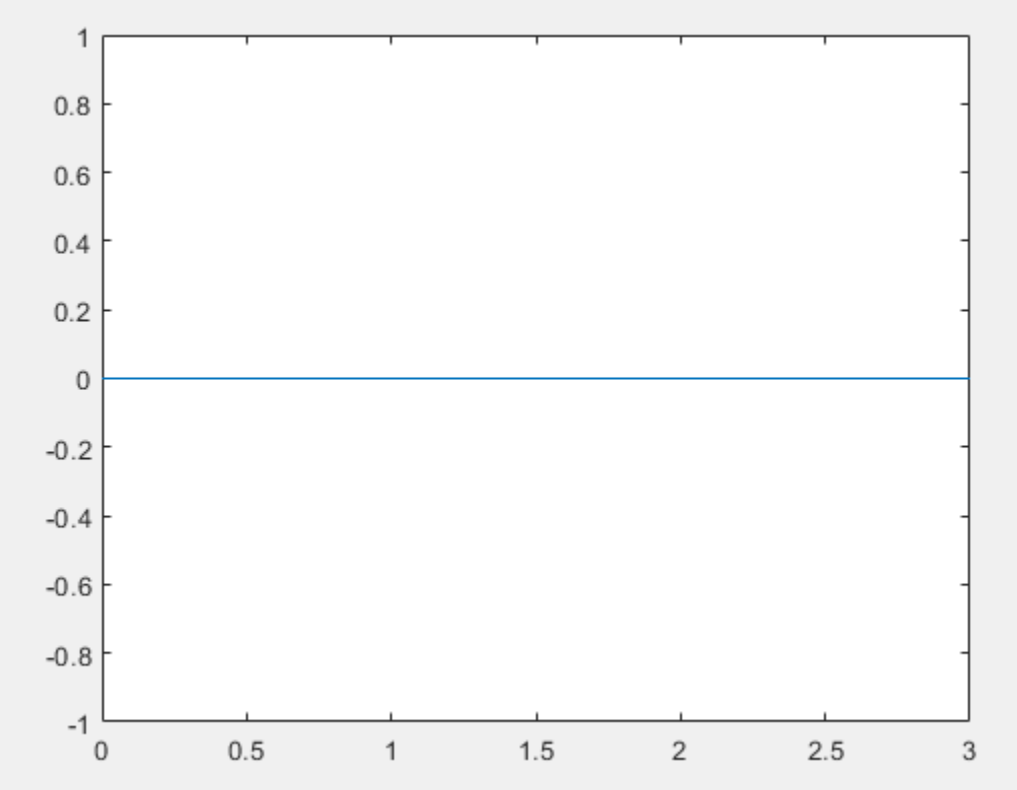
ID: 6297

Question #1

Code:

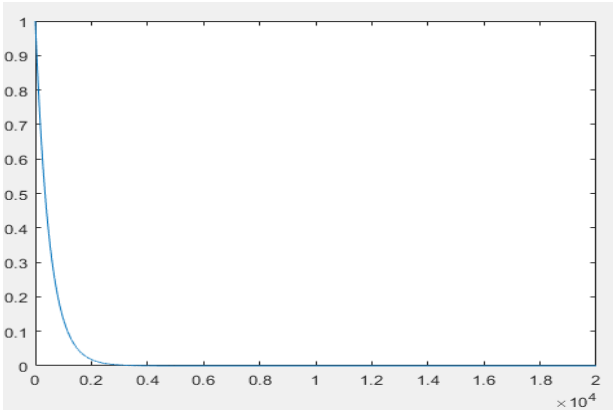
```
X = zeros(1, 2000);
Y1 = 0;
Y2 = zeros(1, 1000);
Y3 = 1;
Y = [Y1 Y2 Y3];
Z = (1/1000)*conv(X, Y);
t = linspace(0, 3, 3001);
plot(t, Z);
```

Figure:



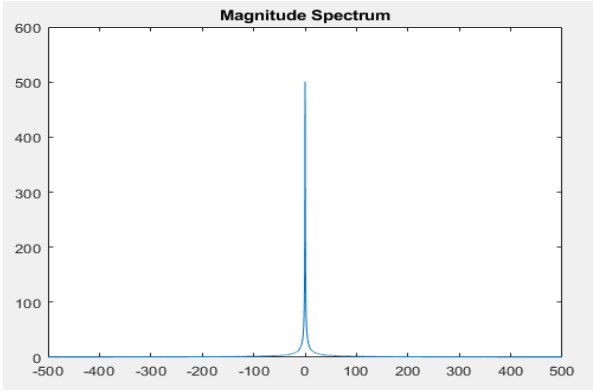
Question #2

a)
```
t = linspace(0, 20, 20000);
y = exp(-2*t);
plot(y);
```

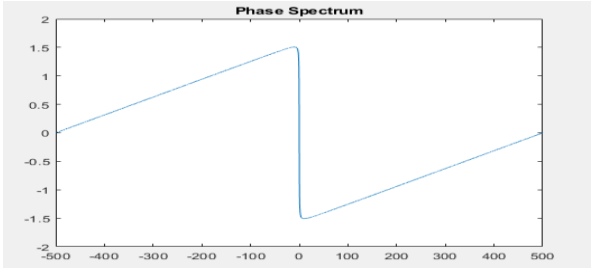


b)
```
Y = fftshift(fft(y));
```
Fourier Transform = 1/(2+jw)

c)
```
Fvec = linspace(-500, 500, 20000);
Ymag = abs(Y);
figure;
plot(Fvec, Ymag);
```



d)
```
Fvec = linspace(-500, 500, 20000);
Yphase = angle(Y);
figure;
plot(Fvec, Yphase);
```



e) Zero (Decaying signal)