

## PROBLEM:

The following MATLAB program makes a plot of a “cosine-times-sine” signal:

```
tt = 0:0.01:2;  
xc = cos(21*pi*tt);  
xs = sin(3pi*tt);  
xx = xc .* xs;  
plot(tt,xx)
```

- Make a sketch of the plot that will be done by MATLAB. Label the time axis carefully.
- The “spectrum” diagram gives the frequency content of a signal. Draw a sketch of the spectrum for each of the three signals represented by  $x_c$ ,  $x_s$  and  $x_x$ . Label the frequencies and complex amplitudes of each component.