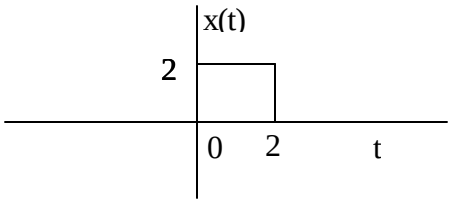
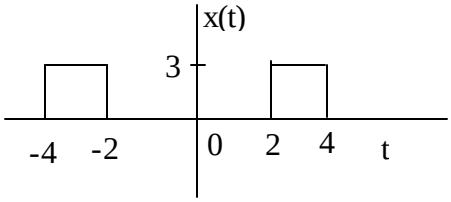
Fourier Transform

For each signal, find the Fourier transform, $X(\omega)$, and then plot $|X(\omega)|$ (note, you may want to use MATLAB for the plot in 3.)

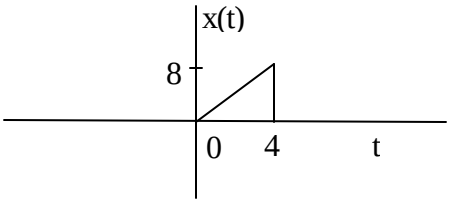
1.



2 .



3.

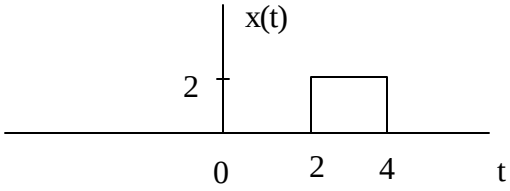


4. $x(t) = \cos(200t)p_4(t)$

5. $x(t)=e^{-3t}\cos(10t)u(t)$

6. Find the Fourier transform of the following signals. Sketch $|X(\omega)|$ in each case.

a)



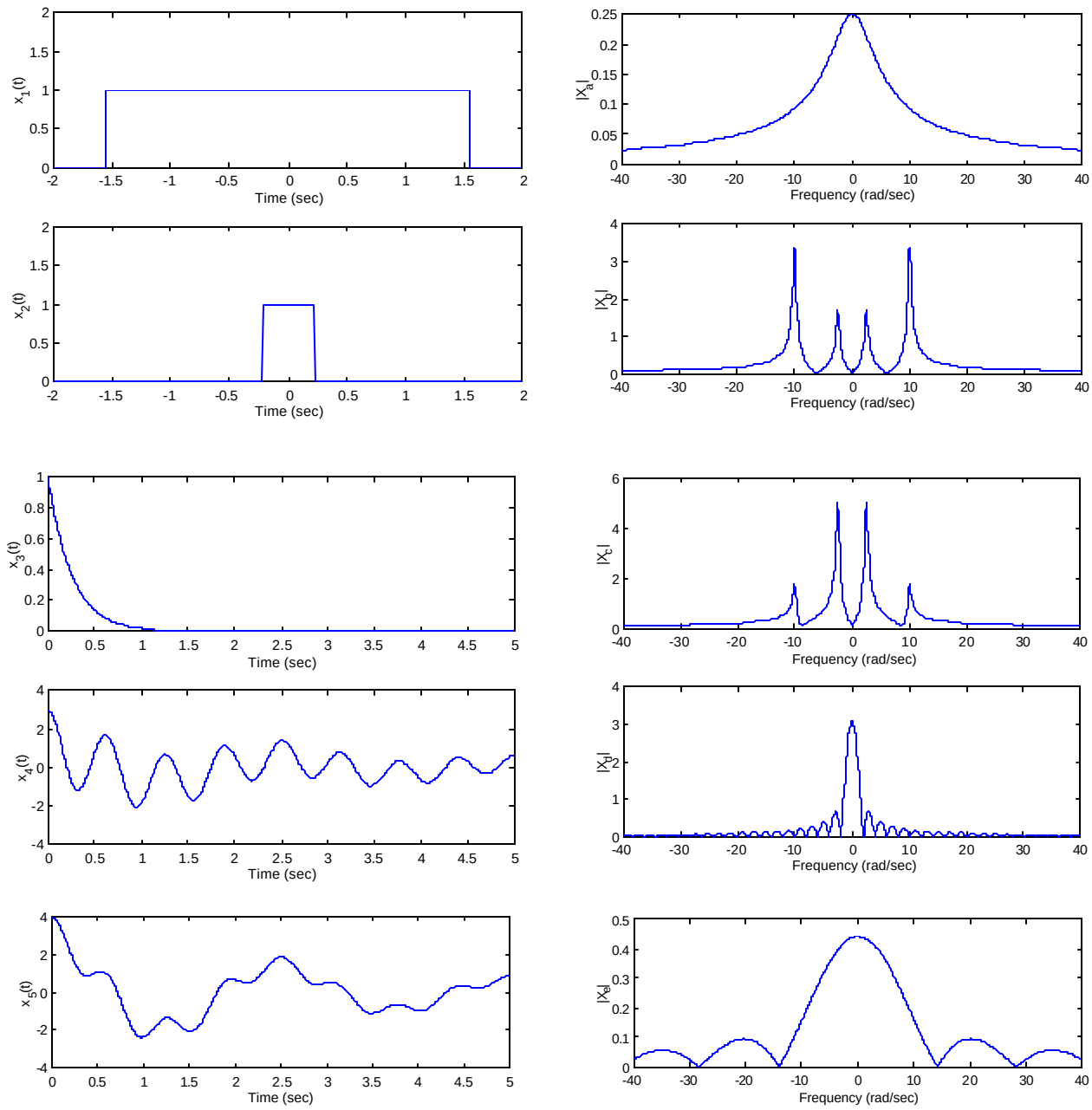
b) $x(t) = 2e^{-2t}u(t)$

c) $x(t)=5e^{-5t}\, u(t)$

d) $x(t) = e^{-2t}\cos(4t)u(t)$

7. Match the time responses with the corresponding frequency responses.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____



8. Compute the inverse Fourier transform of the following signal.