1. Do parts (a) and (b) of problem 6.3-6 on page 673. The coefficients and phases graphed in figure P6.3-6 are those from the first equation in section 6.3-2 on page 634. [5 *points*]

2. Find the Fourier transform of the following signals. You can use the properties of the Fourier transform where appropriate. [12 *points*]

   (a) The signal in Figure P7.1-4(b) on page 761.

   (b) rect$((t - 10)/8)$, where rect$(t/4)$ is graphed in Figure 7.26(a) on page 710.

   (c) $\delta(t + 2) - \delta(t - 2)$

   (d) The signal in Figure P7.3-3(c) on page 763.

   (e) $2\left[u(t) - u(t - 6)\right]$

   (f) $4\ \left(\text{sinc}(t/4)\right)^2$

3. Find the inverse Fourier transform of the following spectra. [10 *points*]

   (a) The spectrum in Figure P7.2-4(a) on page 762.

   (b) rect$((\omega - 10)/2\pi)$

   (c) The spectrum in Figure P7.1-7(a) on page 761.

   (d) The spectrum in Figure P7.1-6(b) on page 761.

   (e) The spectrum in Figure P7.3-7(b) on page 764.