1. 5.35a,b,c,f,g,h

2. 5.36a,b,c (note p(t) = our $\delta_T(t)$)

3. 5.37a,b,c (note p(t) = our $\delta_T(t)$)

4. Consider $x(t) = 3\text{sinc}\left(\dfrac{3t}{2\pi}\right)$.

   a. Determine the Continuous-Time Fourier Transform $X(\omega)$ of $x(t)$ and plot its magnitude spectrum.

   b. Determine the Nyquist (minimum) sampling frequency in Hertz and radians/second along with the corresponding sampling period in seconds for $x(t)$ so that its frequency information remains undistorted after sampling.

   c. Sample $x(t)$ at $T = 2\pi,\ \dfrac{2\pi}{3},$ and $\dfrac{2\pi}{6}$ seconds and write expressions for the three resulting discrete-time signals $x[n]$. Note practical sampling is used here, not ideal (impulse) sampling. Plot your three resulting $x[n]$ for $-10 \le n \le 10$.

   d. Determine the Discrete-Time Fourier Transform $X(\Omega)$ of each $x[n]$ in part **c** and plot their magnitude spectra for $-2\pi \le \Omega \le 2\pi$.

   e. For which sampling intervals does the discrete-time frequency magnitude spectra in part **d** yield good information about the continuous-time frequency magnitude spectrum of part **a**?