Exercise for home study (not to be turned in, although we will provide solutions):

O&W 3.46 (a),(c)

Problems to be turned in:

Problem 1  O&W 3.22 (a) - only the signal in Figure p3.22 (c)

Problem 2  O&W 3.23 (a)

Problem 3  Determine the Fourier series coefficients for the periodic signal $x[n]$ depicted below. Plot the magnitude and phase of these coefficients.

Problem 4  O&W 3.29 (a)
Problem 5  Consider the following CT periodic signals, $x(t)$, $y(t)$, and $z(t)$.

(a) Determine the fundamental frequency, period, and Fourier series coefficients, $a_k$, for $x(t)$.

(b) Determine the fundamental frequency, period, and Fourier series coefficients, $b_k$, for $y(t)$.

(c) Determine the fundamental frequency and period for $z(t)$. Also, using the results of parts (a) and (b), determine the Fourier series coefficients, $c_k$, for $z(t)$.

Problem 6  Let $x(t)$ be a periodic signal with fundamental period $T$ and Fourier series coefficients $a_k$. Derive the Fourier series coefficients of each of the following signals in terms of $a_k$:

(a) $\mathcal{O}d\{x(t - T/2)\}$

(b) $x(T/4 - t)$
Problem 7  O&W 3.31 (also determine $a_0$)

Problem 8  O&W 3.51

Reminder: The first 20 problems in each chapter of O&W have answers included at the end of the text. Consider using these for additional practice, either now or as you study for tests.