REMINDER: Quiz #2 will be held from 7:30 - 9:30 p.m. Thursday, November 13 in Walker Memorial. The quiz will cover materials in Chapters 4 -7 (through Section 7.4) of O&W, Lectures and Recitations through October 29, Problem Sets # 4-6, and that part of Problem Set # 7 involving problems from Chapter 7.

Reading Assignments:

 Lectures #16-18 & PS#8: Section 7.5, Chapters 8 & 9 (through Section 9.6) of O&W
 Lectures #18-20 & PS#9: Chapters 9 & 11 (through Subsection 11.3.4) of O&W

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

 O&W 8.35

Problems to be turned in:

Problem 1 O&W 7.34

Problem 2 Consider the following system:

\[ x[n] \rightarrow \cdot \cos[\omega_0 n] \rightarrow \cdot \sin[\omega_0 n] \rightarrow \begin{cases} H(e^{j\omega}) & x_c[n] \\ \downarrow m \end{cases} \rightarrow y_c[n] \]

\[ \begin{cases} H(e^{j\omega}) \\ \mid \omega \mid = \omega_0 = \frac{2}{3} \pi \end{cases} \]

\[ H(e^{j\omega}) \rightarrow \begin{cases} 1 & x_s[n] \\ \downarrow m \end{cases} \rightarrow y_s[n] \]

\[ \downarrow m \text{ denotes downsampling by } m, \text{ and } \uparrow m \text{ denotes upsampling by } m \text{ as illustrated below.} \]
Problem 3  Determine the Laplace transform and the associated region of convergence and pole-zero plot for each of the following functions of time:

(a) \( x(t) = e^{-t}u(-t) + 2e^{-2t}u(t) \)

(b) \( x(t) = (e^t \cos t)u(-t) + u(-t) \)

Problem 4  Determine the function of time, \( x(t) \), for each of the following Laplace transforms and associated region of convergence:

(a) \( X(s) = \frac{s - 25}{s^2 - s - 12}, \quad -3 < \Re\{s\} < 4 \)

(b) \( X(s) = \frac{2s^2 + 7s + 9}{(s + 2)^2}, \quad \Re\{s\} > -2 \)