Indian Institute of Science

E9−252: Mathematical Methods and Techniques in Signal Processing

Instructor: Shayan G. Srinivasa

Homework #3, Fall 2017

Late submission policy: Points scored = Correct points scored $\times\ e^{-d}$, d = # days late
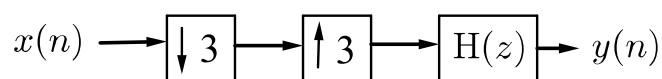
Assigned date: Sept. 11th 2017   **Due date**: Sept. 18th 2017 by end of the day
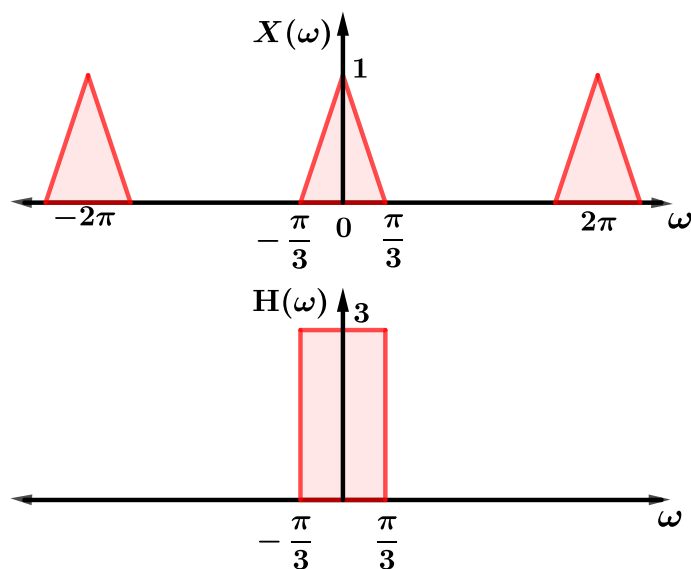
PROBLEM 1:

Solve problems 4.6 and 4.11 from P. P. Vaidyanathan's book.

PROBLEM 2:

Consider the following system:

Suppose the spectrum of the original signal and transfer function is:

Analyze the spectrum of $y(t)$. Analyze the output spectrum if the decimator and expander and interchanged.