Problem Set 1
Assigned: Tuesday, Jan. 18, 2005
Due: Tuesday, Jan. 25, 2005

Discrete-Time Signals and Systems

1.1: Proakis and Manolakis 2.3
1.2: Proakis and Manolakis 2.4
1.3: Proakis and Manolakis 2.6
1.4: Proakis and Manolakis 2.17

1.5: An LTI system has impulse response $h[n] = u[n]$, find the response of the system to the input $x[n]$ described as follows:

$$x[n] = \begin{cases} 1 - \frac{|n|}{L}, & \text{if } |n| \leq L, \\ 0, & \text{otherwise.} \end{cases}$$

(1)

Lab Assignment 1: Discrete-Time Signals and Systems

For the following problems, you should hand in the Matlab scripts and the resulting figures.

L1.1: Use Matlab to reproduce Figs. 2.1-2.5 in the text book.

L1.2: Use “conv” in Matlab to solve Proakis and Manolakis 2.17 again.