Homework #7
Due Date: Mar. 16, 2005

1. (a) Use Matlab to calculate the DTFT of \( x(n) = (0.6)^n u(n) \) and plot the magnitude and phase of \( X(\omega) \) from \(-\pi\) to \(\pi\).
   (b) Do the same for \( x(n) = (0.6)^{(n-2)} u(n-2) \)

2. (a) Using Matlab, numerically calculate the convolution of \( x(n) = (0.6)^n u(n) \) with \( h(n) = \begin{cases} 1 & 0 \leq n \leq 5 \\ 0 & \text{otherwise} \end{cases} \) and plot.
   (b) Using Matlab, numerically calculate the DTFT of both \( x \) and \( h \) and then numerically determine the inverse DTFT of the product of those two and plot. Compare to part (a).

3. O&W 5.21 (a-f)

4. O&W 5.24