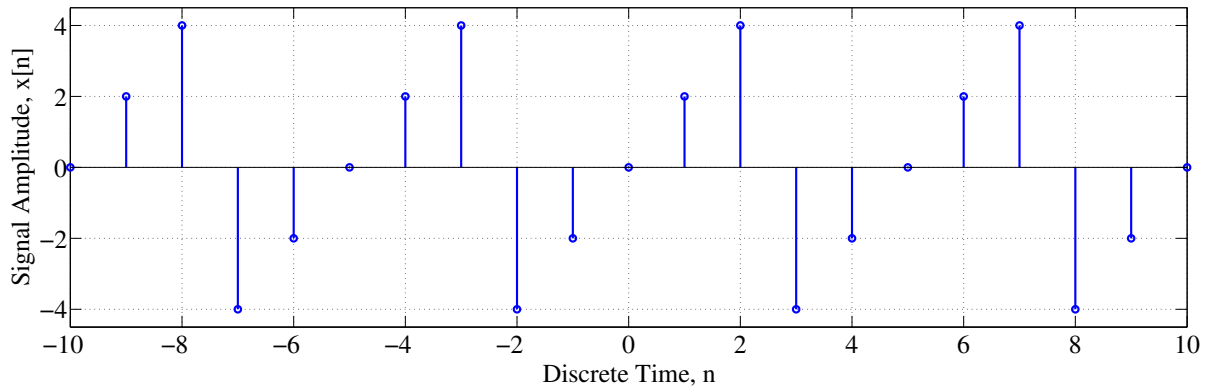# ELEC 309
Signals and Systems
Homework 6 Assignment

Frequency-Domain Analysis of Signals

1. For the periodic discrete-time signal $x[n]$ shown above:

   (a) Find the Fourier series representation of $x[n]$.

   (b) Verify Parseval's theorem for $x[n]$.

   (c) Using MATLAB, write a script m-file to plot the Fourier spectra for the signal. (Plot $|\mathcal{D}_k|$ vs. k and $\angle\mathcal{D}_k$ vs. k on a single figure by using the *subplot* command.) Upload a copy of your MATLAB script m-file to the course website.