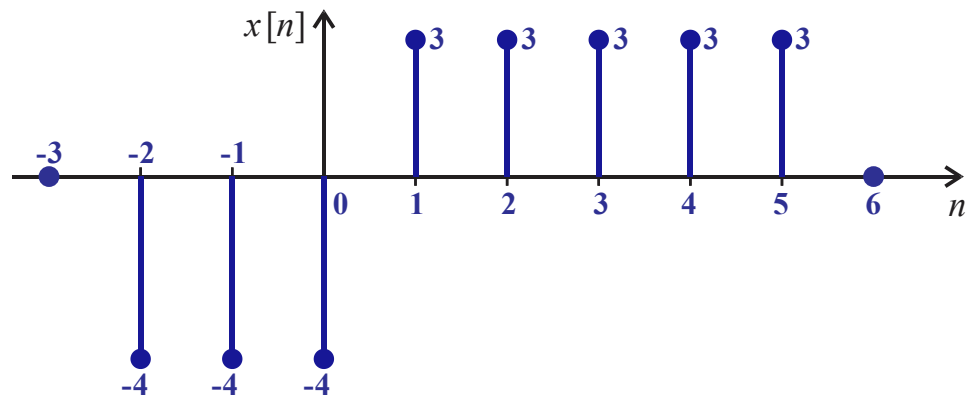# Homework 6
EE 313 Signals and Systems (Fall 2024)
Wednesday, October 23, 2024

1) Compute the DTFT of the discrete-time signal $x[n]$ shown below in the simplest possible form. Plot the amplitude and phase spectrum for $-\pi \leq \Omega \leq \pi$ rad.

2) 4.4b Plot the amplitude and phase spectrum for $-\pi \leq \Omega \leq \pi$ rad.

3) 4.5agh

4) 4.6d First express $X(\Omega)$ in terms of rectangular and triangular pulses for the range $-\pi \leq \Omega \leq \pi$. Then, find $x[n]$ using tables. Plot $x[n]$ for $-5 \leq n \leq 5$ with non-zero stems labeled to at least 3 significant figures.

- Unless otherwise specified, you may use DTFT properties/tables (if referenced).

- For problems that involve the use of MATLAB, include both m-file(s) (put your name in a comment line) as well as output figures (put your name in title), preferably on same page (e.g., cut-n-paste into MS-Word before printing), for each problem and/or problem section.

Due Monday, October 28, 2024