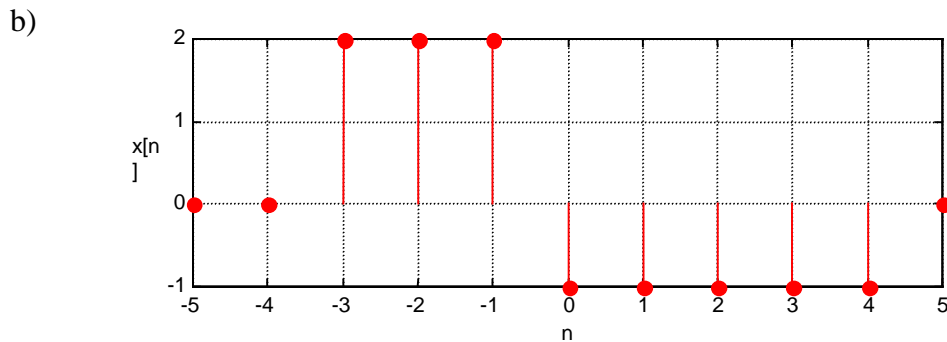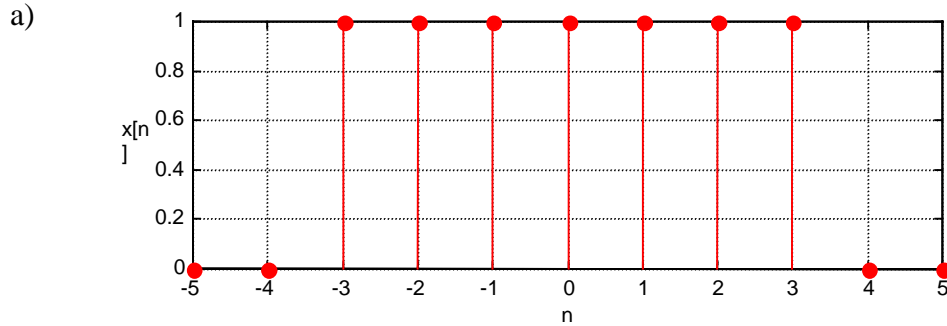1. Compute the DTFT of the discrete-time signals shown. Express the DTFTs in the simplest possible form and plot the magnitude and phase spectrum of each signal for $-\pi \le \Omega \le \pi$.

    a)

    b)

2. Compute the DTFT of the following discrete-time signals and plot the magnitude and phase spectrum of each signal for $-\pi \le \Omega \le \pi$.

    a) $x[n] = (-0.3)^n u[n]$
    b) $x[n] = (-0.3)^n \sin(n) u[n]$
    c) $x[n] = n(-0.3)^n u[n]$
    d) $x[n] = (-0.3)^n e^{jn/2} u[n]$

3. Problem 6.5

4. Problem 6.6c – plot resulting x[n] for $-5 \le n \le 5$.