Unisul

Processamento Digital de Sinais 2018.1

Entrega: 27/06/2018

Lista 2

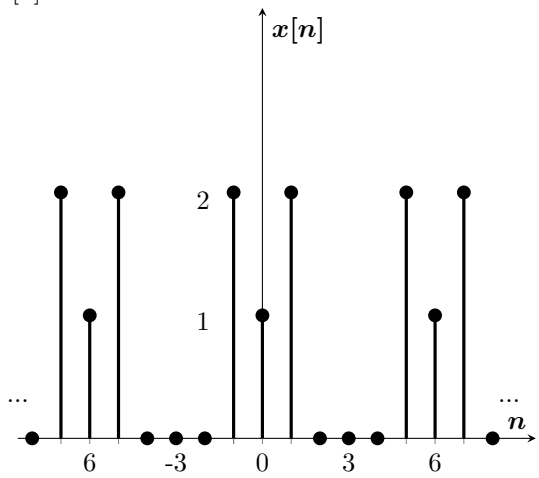
1. Faça no MatLab/Octave a SFTD $X[k]$, o módulo $|X[k]|$ e sua fase $\arg[X[k]$ dos sinais abaixo:

   (a) $x[n] = 4\cos(2.4\pi n) + 2\sin(3.2\pi n)$

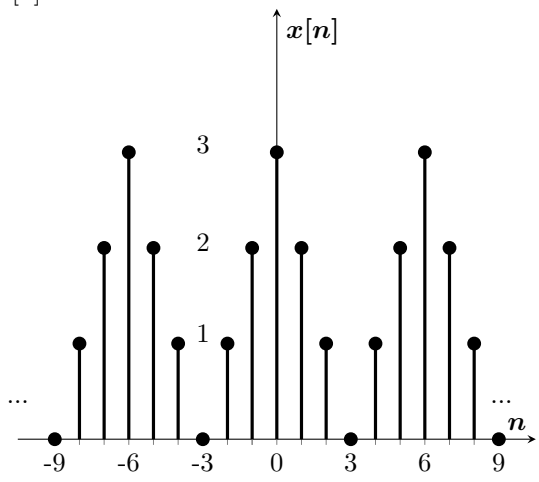
   (b) $x[n] = \cos(2.2\pi n)\cos(3.3\pi n)$

   (c) $x[n] = 2\cos(3.2\pi(n-3))$

   (d) x[n]



   (e) x[n]



2. Para os seguintes sinais, obtenha a TFTD. Assuma $|\alpha| < 1$

   (a) $x[n] = \delta[n]$

   (b) $x[n] = \delta[n - n_0]$

   (c) $x[n] = \alpha^n u[n-1]$

   (d) $x[n] = \alpha^n u[n+1]$

   (e) $x[n] = (-\alpha)^n u[n]$

(f) $x[n] = \alpha^{|n|}$

3. Encontre a transformada z, a região de convergência e a localizações dos polos e zeros dos sinais abaixo:

(a) $x[n] = \left(\frac{1}{2}\right)^n u[n] - \left(\frac{1}{3}\right)^n u[n]$

(b) $x[n] = e^{j\Omega_0 n} u[n]$

(c) $x[n] = -u[-n-1] + \left(\frac{1}{2}\right)^n u[n]$

(d) $x[n] = -\left(\frac{1}{2}\right)^n u[-n] + 2\left(\frac{1}{4}\right)^n u[n]$

(e) $x[n] = -\left(\frac{1}{2}\right)^n u[n] + 2\left(\frac{1}{4}\right)^n u[n]$

(f) $x[n] = -\left(\frac{1}{2}\right)^n u[-n] + 2\left(\frac{1}{4}\right)^n u[-n]$