

Math508 Homework 11

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Abstract

Simulation of a frequency filtering

1 Problem 3

$$Re(\theta_n) = \eta_1 \cos(\lambda_1 n) \quad (1)$$

$$Re(X_n) = \eta_1 \cos(\lambda_1 n) + \eta_2 \cos(\lambda_2 n) \quad (2)$$

$$Re(Y_n^M) = (1 - a^2)((M + 1)\eta_1 \cos(\lambda_1 n) + \sum_{k=0}^M \eta_2 \cos(\lambda_2 n + (\lambda_1 - \lambda_2)k)) \quad (3)$$

Figure 1 is plot of the real parts of θ_n and X_n . Figure 2 is plot of the real parts of θ_n and Y_n^M .

Real parts of θ_n , X_n , $\eta_1=-1.30240760991$, $\eta_2=-0.980846260442$

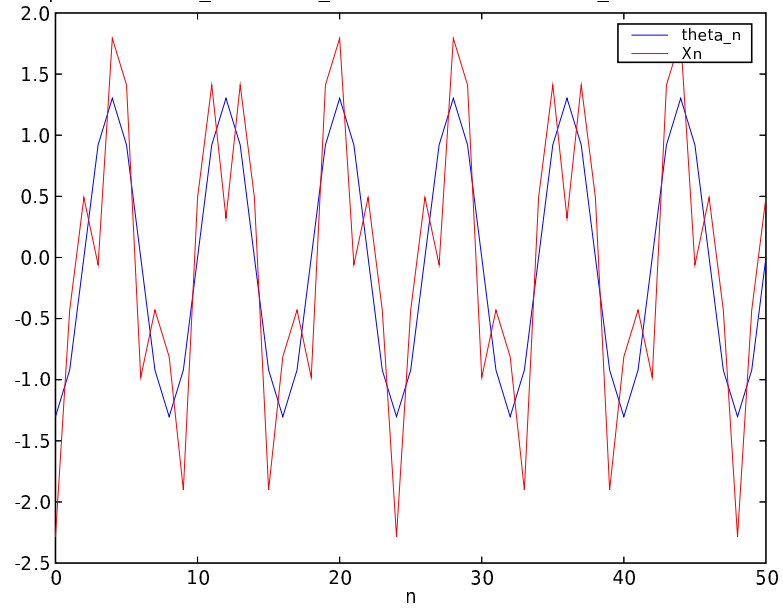


Figure 1:

Real parts of θ_n , Y_n , $\eta_1=-1.30240760991$, $\eta_2=-0.980846260442$

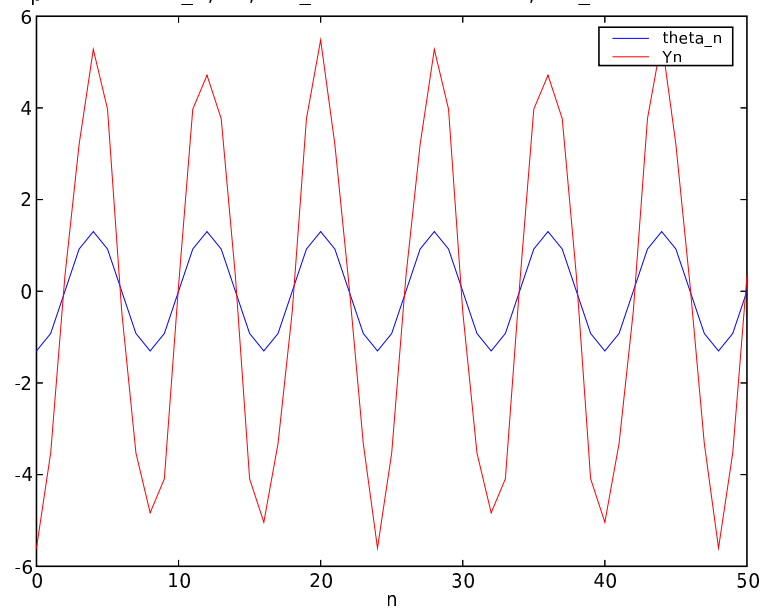


Figure 2: