

Homework 6: due 03/02/18

EE 324: Signals and Systems II

1 Unilateral z transform (need to specify ROC)

1. $x[n] = 0.3^{n-1}(n-2)u[n]$
2. $x[n] = 0.3^{n-1}u[n-2]$
3. $x[n] = n^2 \sin(n-1)u[n]$

2 Bilateral z transform (need to specify ROC)

- 1 . $x[n] = \frac{1}{2^{|n|}}$
2. $x[n] = (n-2)2^{-|n|}$
3. $x[n] = \sin(\frac{2\pi}{3}n)u[-n+1]$

3 Transfer function

Derive the transfer functions, calculate the zeros, poles and determine the stabilities.

1. $y[k+1] - 0.7y[k] = 0.5x[k]$
2. $y[k+1] - y[k-1] = x[k] - 0.5x[k-1]$
3. $y[k] - 0.3y[k-1] - 0.4y[k-2] = x[k]$