Lect3 Example3.11

Q K?

$$x(k+1) = \begin{bmatrix} 1 & 0.0952 \\ 0 & 0.905 \end{bmatrix} x(k) + \begin{bmatrix} 0.00484 \\ 0.0952 \end{bmatrix} u(k)$$

$$y(k) = [1 \quad 0]\, x(k)$$

$$\alpha_c(z) = z^2 + 1.776z + 0.819$$

Solution $K = [0 \quad 1]\, W_c^{-1} \alpha_c(A)$

$$\alpha_c(A) = \begin{bmatrix} 1 & 0.0952 \\ 0 & 0.905 \end{bmatrix}^2 + 1.776 \begin{bmatrix} 1 & 0.0952 \\ 0 & 0.905 \end{bmatrix} + 0.819]_2$$

$$W_c^{-1} = [B \quad AB]^{-1} = \begin{bmatrix} -95.13 & 15.34 \\ 105.1 & -1.342 \end{bmatrix}$$

$$K = [4.52 \quad 1.12]$$