Lect 2. Example 2.2.

$$G(z) = \frac{-2z^3 + 2z^2 - z + 2}{z^3 + z^2 - z - \frac{3}{4}} \rightarrow \text{CCF}$$

Solution

$$z^3 + z^2 - z - \frac{3}{4} \;\Big)\; \begin{array}{r} -2 \\ \hline -2z^3 + 2z^2 - z + 2 \\ -2z^3 - 2z^2 + 2z + \frac{3}{2} \\ \hline 4z^2 - 3z + \frac{1}{2} \end{array}$$

$$G(z) = -2 + \frac{4z^2 - 3z + \frac{1}{2}}{z^3 + z^2 - z - \frac{3}{4}} \qquad z = \frac{A}{B} = C \cdots D \qquad z = C + \frac{P}{B}$$

$$C_c = \begin{bmatrix} \frac{1}{2} & -3 & 4 \end{bmatrix}$$

$$A_c = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ \frac{3}{4} & 1 & 1 \end{bmatrix} \qquad B_c = \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix} \qquad d_c = -2$$