

Contoh: Tentukan matrix A, B, C dan D dari model Ruang Keadaan hasil konversi dari:

Ket.: A berbentuk Jordan Compartment

$$G(s) = \frac{3s^2 + 2s + 1}{6s^7 + 8s^6 + 10s + 12}$$

Jawab: $m=2$

$$b_0 = 1$$

$$b_1 = 2$$

$$b_2 = 3$$

$$C = [1 \quad 2 \quad 3 \quad 0 \quad 0 \quad 0 \quad 0]$$

$$D = [\phi]$$

$n=7 \Rightarrow$ kasus $m < n$

$$a_0 = 12 \quad a_1 = 10 \quad a_2 = 0 \quad a_3 = 0$$

$$a_4 = 0 \quad a_5 = 0 \quad a_6 = 8 \quad a_7 = 6$$

$$A = \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ & 0 & 1 & 0 & 0 & 0 & 0 \\ & & 0 & 1 & 0 & 0 & 0 \\ & & & 0 & 1 & 0 & 0 \\ & & & & 0 & 1 & 0 \\ & & & & & 0 & 1 \\ -2 & -\frac{10}{6} & 0 & 0 & 0 & 0 & -\frac{12}{6} \end{bmatrix}$$

$$B = \begin{bmatrix} 0 \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 6 \end{bmatrix}$$