

Baris

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

-Peringkat matriks-

Formula: Baris x Lajur
2x2

$$\begin{matrix} \rightarrow \\ \rightarrow \\ \rightarrow \end{matrix} \begin{bmatrix} -1 \\ 0 \\ 3 \end{bmatrix}$$

3x1

$$\begin{matrix} \rightarrow \\ \rightarrow \end{matrix} \begin{bmatrix} 2 & 0 & 4 \\ 3 & 7 & -2 \end{bmatrix}$$

2x3

$$\rightarrow \begin{bmatrix} 4 & -1 & 6 \end{bmatrix}$$

1x3

-matriks sama-

① Peringkat sama

② unsur sama

$$A = \begin{bmatrix} 0.2 & -4 \\ 1 & 7 \end{bmatrix} \quad B = \begin{bmatrix} \frac{2}{10} & -4 \\ 1 & 7 \end{bmatrix}$$

1) Peringkat A: 2x2 B: 2x2

2) unsur A: 0.2, B = $\frac{2}{10} = 0.2$

Semua unsur sama.

$$\therefore A = B$$

$$C = \begin{bmatrix} -1 & 4 \\ 0 & 7 \end{bmatrix}$$

$$D = \begin{bmatrix} 7 \\ 4 \end{bmatrix}$$

1) Peringkat

A: 2x2

B: 2x1

$$\therefore C \neq D$$

tanz

①

- OPERASI TAMBAH & TOLAK MATRIKS -

$$\begin{bmatrix} 2 & -1 \\ 4 & -3 \end{bmatrix} + \begin{bmatrix} 4 & 3 \\ 7 & 2 \end{bmatrix} = \begin{bmatrix} 2+4 & -1+3 \\ 4+7 & -3+2 \end{bmatrix} \\ = \begin{bmatrix} 6 & 2 \\ 11 & -1 \end{bmatrix}$$

$$\begin{bmatrix} 2 & -1 \\ 4 & -3 \end{bmatrix} - \begin{bmatrix} 4 & 3 \\ 7 & 2 \end{bmatrix} = \begin{bmatrix} 2-4 & -1-3 \\ 4-7 & -3-2 \end{bmatrix} \\ = \begin{bmatrix} -2 & -4 \\ -3 & -5 \end{bmatrix}$$

- OPERASI DARAB - (Klu: Peringkat)

① $\begin{bmatrix} 1 & 2 & -1 \\ -2 & 4 & -7 \end{bmatrix} =$ Jawapan mestidlm peringkat 2x1

Peringkat: $2 \times 2 \times 2 \times 1 = 2 \times 1$

$$= \begin{bmatrix} 1 \times (-1) + 2(-7) \\ -2 \times (-1) + 4(-7) \end{bmatrix}$$

$$= \begin{bmatrix} -1 + (-14) \\ 2 + (-28) \end{bmatrix}$$

$$= \begin{bmatrix} -15 \\ -26 \end{bmatrix}$$

② $\begin{bmatrix} 1 \\ 4 \end{bmatrix} \begin{bmatrix} 3 & 2 \end{bmatrix}$

Ⓟ: $2 \times 1 \times 1 \times 2 = (2 \times 2)$

$$= \begin{bmatrix} 1 \times 3 & 1 \times 2 \\ 4 \times 3 & 4 \times 2 \end{bmatrix}$$

$$= \begin{bmatrix} 3 & 2 \\ 12 & 8 \end{bmatrix}$$

tani7

②

- matriks Identiti -

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \quad \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

matriks A x matriks Identiti = matriks A
 $A \times I = A$, $I \times A = A$

- matriks song-sang -

$$M = \begin{bmatrix} a & b \\ c & d \end{bmatrix} \quad M^{-1} = \frac{1}{ad-bc} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

() a dan d : tukar tempat, simbol tukar

() b dan c : kekal tempat, simbol tukar (x c-1)

Contoh:

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{bmatrix} 3 & -5 \\ 2 & -7 \end{bmatrix} \quad A^{-1} = \frac{1}{ad-bc} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$
$$= \frac{1}{3(-7) - (-5)(2)} \begin{bmatrix} -7 & 5 \\ -2 & 3 \end{bmatrix}$$

TIPS

- Label dulu a, b, c, d
- Ganti nilai ikut formula

$$= \frac{1}{-21 - (-10)} \begin{bmatrix} -7 & 5 \\ -2 & 3 \end{bmatrix}$$
$$= \frac{1}{-11} \begin{bmatrix} -7 & 5 \\ -2 & 3 \end{bmatrix} \quad \text{②} \quad \begin{bmatrix} \frac{7}{11} & \frac{-5}{11} \\ \frac{2}{11} & \frac{-3}{11} \end{bmatrix} \quad \text{③}$$

+amz