

$$3. \text{ Di } A = \begin{pmatrix} -1 & 2 & 4 \\ 3 & -2 & 2 \\ 1 & -3 & 1 \end{pmatrix} \quad B = \begin{pmatrix} 5 & 1 & -1 \\ 2 & 2 & 1 \\ -3 & -2 & 1 \end{pmatrix}$$

Calculus:

a) A^{-1}

$$\left(\begin{array}{ccc|ccc} -1 & 2 & 4 & 1 & 0 & 0 \\ 3 & -2 & 2 & 0 & 1 & 0 \\ 1 & -3 & 1 & 0 & 0 & 1 \end{array} \right) \xrightarrow{f_1 = f_1 + f_3} \left(\begin{array}{ccc|ccc} 0 & -1 & 2 & 1 & 0 & 1 \\ 3 & -2 & 2 & 0 & 1 & 0 \\ 1 & -3 & 1 & 0 & 0 & 1 \end{array} \right) \rightarrow \left(\begin{array}{ccc|ccc} 1 & -3 & 1 & 0 & 0 & 1 \\ 3 & -2 & 2 & 0 & 1 & 0 \\ 0 & -1 & 2 & 1 & 0 & 1 \end{array} \right)$$

$$\begin{array}{l} f_1 = f_1 - 3f_3 \\ f_2 = f_2 - 2f_3 \end{array} \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -5 & -3 & 0 & -2 \\ 3 & 0 & -2 & -2 & 1 & -2 \\ 0 & -1 & 2 & 1 & 0 & 1 \end{array} \right) \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -5 & -3 & 0 & -2 \\ 0 & -1 & 2 & 1 & 0 & 1 \\ 3 & 0 & -2 & -2 & 1 & -2 \end{array} \right)$$

$$f_3 = f_3 - 3f_1 \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -5 & -3 & 0 & -2 \\ 0 & -1 & 2 & 1 & 0 & 1 \\ 0 & 0 & 13 & 7 & 1 & 4 \end{array} \right) \xrightarrow{f_3 = f_3/13} \left(\begin{array}{ccc|ccc} 1 & 0 & -5 & -3 & 0 & -2 \\ 0 & -1 & 2 & 1 & 0 & 1 \\ 0 & 0 & 1 & \frac{7}{13} & \frac{1}{13} & \frac{4}{13} \end{array} \right)$$

$$f_2 = f_2 - 2f_3 \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & -5 & -3 & 0 & -2 \\ 0 & -1 & 0 & -\frac{1}{13} & \frac{2}{13} & \frac{5}{13} \\ 0 & 0 & 1 & \frac{7}{13} & \frac{1}{13} & \frac{4}{13} \end{array} \right) \xrightarrow{f_2 = -1 \cdot f_2} \left(\begin{array}{ccc|ccc} 1 & 0 & -5 & -3 & 0 & -2 \\ 0 & 1 & 0 & \frac{1}{13} & \frac{2}{13} & -\frac{5}{13} \\ 0 & 0 & 1 & \frac{7}{13} & \frac{1}{13} & \frac{4}{13} \end{array} \right)$$

$$f_1 = f_1 + 5f_3 \rightarrow \left(\begin{array}{ccc|ccc} 1 & 0 & 0 & -\frac{4}{13} & \frac{5}{13} & \frac{46}{13} \\ 0 & 1 & 0 & \frac{4}{13} & \frac{2}{13} & -\frac{5}{13} \\ 0 & 0 & 1 & \frac{7}{13} & \frac{1}{13} & \frac{4}{13} \end{array} \right)$$

$$A^{-1} = \begin{pmatrix} -\frac{4}{13} & \frac{5}{13} & \frac{46}{13} \\ \frac{1}{13} & \frac{2}{13} & -\frac{5}{13} \\ \frac{7}{13} & \frac{1}{13} & \frac{4}{13} \end{pmatrix}$$

b) hitung B^{-1}

$$B^{-1} = \begin{pmatrix} \frac{4}{13} & \frac{1}{13} & \frac{3}{13} \\ -\frac{5}{13} & \frac{2}{13} & -\frac{7}{13} \\ \frac{2}{13} & \frac{7}{13} & \frac{8}{13} \end{pmatrix}$$