

$$\left[ \begin{array}{ccccc|ccccc} 1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 1 & 2 & 1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 1 & 3 & 2 & 1 & 0 & 0 & 0 & 0 & 1 & 0 \\ 1 & 4 & 3 & 2 & 1 & 0 & 0 & 0 & 0 & 1 \end{array} \right]$$

$$\text{row } 2 = \text{row } 2 - \text{row } 1$$

$$\text{row } 3 = \text{row } 3 - \text{row } 1$$

$$\text{row } 4 = \text{row } 4 - \text{row } 1$$

$$\text{row } 5 = \text{row } 5 - \text{row } 1$$

$$\longrightarrow$$

$$\left[ \begin{array}{ccccc|ccccc} 1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & -1 & 1 & 0 & 0 & 0 \\ 0 & 2 & 1 & 0 & 0 & -1 & 0 & 1 & 0 & 0 \\ 0 & 3 & 2 & 1 & 0 & -1 & 0 & 0 & 1 & 0 \\ 0 & 4 & 3 & 2 & 1 & -1 & 0 & 0 & 0 & 1 \end{array} \right]$$

$$\text{row } 2 = \text{row } 2 - 2\text{row } 1$$

$$\text{row } 3 = \text{row } 3 - 3\text{row } 1$$

$$\text{row } 4 = \text{row } 4 - 4\text{row } 1$$

$$\longrightarrow$$

$$\left[ \begin{array}{ccccc|ccccc} 1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & -1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 & -2 & 1 & 0 & 0 \\ 0 & 0 & 2 & 1 & 0 & 2 & -3 & 0 & 1 & 0 \\ 0 & 0 & 3 & 2 & 1 & 3 & -4 & 0 & 0 & 1 \end{array} \right]$$

$$\text{row } 3 = \text{row } 3 - 2\text{row } 2$$

$$\text{row } 4 = \text{row } 4 - 3\text{row } 2$$

$$\longrightarrow$$

$$\left[ \begin{array}{ccccc|ccccc} 1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & -1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 & -2 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & -1 & 3 & -1 & 1 & 0 \\ 0 & 0 & 0 & 3 & 1 & -4 & 7 & -2 & 1 & 1 \end{array} \right]$$

$$-4 - 3(-1)$$

$$1 - 3(-1)$$

$$\text{row 4} = \text{row 4} - \sum \text{row } i$$

$$\left[ \begin{array}{cccccc|cccccc} 1 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & -1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 1 & -2 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & -1 & 4 & -3 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 1 & -2 & 4 & -2 & 1 \end{array} \right]$$

$$\rightarrow A^{-1} = \left[ \begin{array}{cccccc} 1 & 0 & 0 & 0 & 0 & 0 \\ -1 & 1 & 0 & 0 & 0 & 0 \\ 1 & -2 & 1 & 0 & 0 & 0 \\ -1 & 4 & -3 & 1 & 0 & 0 \\ 1 & -2 & 4 & -2 & 1 & 0 \end{array} \right]$$