Ex 1.1.13

a)
$$\left(\begin{array}{ccc|ccc} 1 & -1 & 0 & 1 & 0 & 0 \\ 0 & 1 & -1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 0 & 0 & 1 \end{array}\right) \sim \quad L_3 - L_1 \to L_3$$

$$\left(\begin{array}{ccc|ccc} 1 & -1 & 0 & 1 & 0 & 0 \\ 0 & 1 & -1 & 0 & 1 & 0 \\ 0 & 1 & 1 & -1 & 0 & 1 \end{array}\right) \quad L_1 + L_2 \to L_1 \quad \sim \quad L_3 - L_2 \to L_3$$

$$\left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 1 & 0 \\ 0 & 1 & -1 & 0 & 1 & 0 \\ 0 & 0 & 2 & -1 & -1 & 1 \end{array}\right) \sim \quad \frac{1}{2} L_3 \to L_3$$

$$\left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 1 & 0 \\ 0 & 1 & -1 & 0 & 1 & 0 \\ 0 & 0 & 1 & -1/2 & -1/2 & 1/2 \end{array}\right) \quad L_1 + L_3 \to L_1 \quad L_2 + L_3 \to L_2 \quad \sim$$

$$\left(\begin{array}{ccc|ccc} 1 & 0 & 0 & 1/2 & 1/2 & 1/2 \\ 0 & 1 & 0 & -1/2 & 1/2 & 1/2 \\ 0 & 0 & 1 & -1/2 & -1/2 & 1/2 \end{array}\right)$$

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b) $\left(\begin{array}{ccc|ccc} -1/2 & -1/2 & -1/2 & 1 & 0 & 0 \\ 3/2 & 1/2 & -1/2 & 0 & 1 & 0 \\ 1 & 1 & 0 & 0 & 0 & 1 \end{array}\right)$ $\begin{array}{l} -2L_1 \to L_1 \\ 2L_2 \to L_2 \\ \sim \end{array}$

$\left(\begin{array}{ccc|ccc} 1 & 1 & 1 & -2 & 0 & 0 \\ 3 & 1 & -1 & 0 & 2 & 0 \\ 1 & 1 & 0 & 0 & 0 & 1 \end{array}\right)$ $\begin{array}{l} L_2 - 3L_1 \to L_2 \\ \sim \\ L_3 - L_1 \to L_3 \end{array}$

$\left(\begin{array}{ccc|ccc} 1 & 1 & 1 & -2 & 0 & 0 \\ 0 & -2 & -4 & 6 & 2 & 0 \\ 0 & 0 & -1 & 2 & 0 & 1 \end{array}\right)$ $\begin{array}{l} -\frac{1}{2}L_2 \to L_2 \\ \sim \end{array}$

$\left(\begin{array}{ccc|ccc} 1 & 1 & 1 & -2 & 0 & 0 \\ 0 & 1 & 2 & -3 & -1 & 0 \\ 0 & 0 & -1 & 2 & 0 & 1 \end{array}\right)$ $\begin{array}{l} L_1 - L_2 \to L_1 \\ \sim \\ -L_3 \to L_3 \end{array}$

$\left(\begin{array}{ccc|ccc} 1 & 0 & -1 & 1 & 1 & 0 \\ 0 & 1 & 2 & -3 & -1 & 0 \\ 0 & 0 & 1 & -2 & 0 & -1 \end{array}\right)$ $\begin{array}{l} L_1 + L_3 \to L_1 \\ \sim \\ L_2 - 2L_3 \to L_2 \end{array}$

$\left(\begin{array}{ccc|ccc} 1 & 0 & 0 & -1 & 1 & -1 \\ 0 & 1 & 0 & 1 & -1 & 2 \\ 0 & 0 & 1 & -2 & 0 & -1 \end{array}\right)$

matrice inverse