

1 次以下の連立 1 次方程式 ($A\mathbf{x} = \mathbf{b}$) を拡大係数行列 ($\tilde{A} = (A|\mathbf{b})$) を用いて表せ.

$$(1) \begin{cases} 3x + 5y = -1 \\ 2x - 7y = 4 \end{cases} \quad (2) \begin{cases} 3x - 2z = 1 \\ y - 2z = 5 \\ x - y = 8 \end{cases}$$

2 次以下の連立 1 次方程式を掃き出し法で解け.

$$(1) \begin{cases} x + 2y = -4 \\ 2x + 3y = -5 \end{cases} \quad (2) \begin{cases} x - 2y = 26 \\ x - 3y = 35 \end{cases} \quad (3) \begin{cases} 2x - 3y = -50 \\ 3x - 4y = -69 \end{cases}$$

$$(4) \begin{cases} x + z = 4 \\ -2x - y + z = -1 \\ 2x + y = 4 \end{cases} \quad (5) \begin{cases} x + 2y + 3z = 9 \\ 3x + y + z = -2 \\ -3x + y + 2z = 13 \end{cases} \quad (6) \begin{cases} 3x + 2y + z = 15 \\ 4x + y + 2z = 14 \\ 5x + 2y + 2z = 21 \end{cases}$$

$$(7) \begin{cases} x + w = 5 \\ y + z = 5 \\ x + y + z = 6 \\ x + z + w = 8 \end{cases} \quad (8) \begin{cases} x + 3y + 2z + 2w = 1 \\ 2x + y + 2z + w = 0 \\ x + 2y + z + w = 2 \\ x + 2y + 2z + 2w = -1 \end{cases}$$

⁰解答:

$$1 \quad (1) \tilde{A} = \left(\begin{array}{cc|c} 3 & 5 & -1 \\ 2 & -7 & 4 \end{array} \right) \quad (2) \tilde{A} = \left(\begin{array}{ccc|c} 3 & 0 & -2 & 1 \\ 0 & 1 & -2 & 5 \\ 1 & -1 & 0 & 8 \end{array} \right)$$

$$2 \quad (1) \begin{matrix} x = 2, y = -3 \\ x = -2, y = 1, z = 3 \end{matrix} \quad (2) \begin{matrix} x = 8, y = -9 \\ x = 5, y = 2, z = -4 \end{matrix} \quad (3) \begin{matrix} x = -7, y = 12 \\ x = 1, y = 2, z = 3, w = 4 \end{matrix} \quad (4) \begin{matrix} x = 1, y = 2, z = 3 \\ x = 1, y = 2, z = -1, w = -2 \end{matrix} \quad (5) \quad (6) \quad (7) \quad (8)$$