

数学 C 2018 レポート 1回目

問 次の1次方程式を解け.

$$x_1 + x_3 + 2x_4 = 6$$

$$-2x_1 + x_2 + 4x_3 + x_4 = 3$$

$$4x_1 - 3x_2 - 4x_3 + x_4 = -3$$

$$-x_1 + x_2 + 2x_3 + x_4 = 4$$

$$x_1 = \boxed{(1)}$$

$$x_4 = \boxed{(2)}$$

(2)

$$\left( \begin{array}{cccc|c} 1 & 0 & 1 & 2 & 6 \\ -2 & 1 & 4 & 1 & 3 \\ 4 & -3 & -4 & 1 & -3 \\ -1 & 1 & 2 & 1 & 4 \end{array} \right)$$

→

② + 2 × ①

③ - 4 × ①

④ + ①

$$\left( \begin{array}{cccc|c} 1 & 0 & 1 & 2 & 6 \\ 0 & 1 & 6 & 5 & 15 \\ 0 & -3 & -8 & -7 & -27 \\ 0 & 1 & 3 & 3 & 10 \end{array} \right)$$

→

③ - ④

③ + 3 × ④

$$\left( \begin{array}{cccc|c} 1 & 0 & 1 & 2 & 6 \\ 0 & 0 & 3 & 2 & 5 \\ 0 & 0 & 1 & 2 & 3 \\ 0 & 1 & 3 & 3 & 10 \end{array} \right)$$

→

① - ③

② - 3 × ③

④ - 3 × ③

$$\left( \begin{array}{cccc|c} 1 & 0 & 0 & 0 & 3 \\ 0 & 0 & 0 & -4 & -4 \\ 0 & 0 & 1 & 2 & 3 \\ 0 & 1 & 0 & -3 & 1 \end{array} \right)$$

→

② × (-1/4)

$$\left( \begin{array}{cccc|c} 1 & 0 & 0 & 0 & 3 \\ 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 2 & 3 \\ 0 & 1 & 0 & -3 & 1 \end{array} \right)$$

→

③ - 2 × ②

④ + 3 × ②

$$\left( \begin{array}{cccc|c} 1 & 0 & 0 & 0 & 3 \\ 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 0 & 1 \\ 0 & 1 & 0 & 0 & 4 \end{array} \right)$$

→

$$\left( \begin{array}{cccc|c} 1 & & & & 3 \\ & 1 & & & 4 \\ & & 1 & & 1 \\ & & & 1 & 1 \end{array} \right)$$

3

$$x_1 = 3, x_2 = 4, x_3 = 1, x_4 = 1$$

$$\boxed{(1)} = x_1 = 3$$

$$\boxed{(2)} = x_4 = 1$$