

# Worksheet

12/07/2020

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Problem quickname: 3339

1)

Solve the linear equation system. Use the Gaussian Elimination algorithm.

$$\begin{array}{l} \text{a)} \quad 10y + -7z = 28 \\ \quad \quad 80y + -65z = 170 \end{array}$$

$$\begin{array}{l} \text{b)} \quad 7y + 2z = 0 \\ \quad \quad -56y + -20z = 28 \end{array}$$

2)

Solve the linear equation system.

$$\begin{array}{l} \text{a)} \quad 4y + -8z = -8 \\ \quad \quad -4y = 40 \end{array}$$

$$\begin{array}{l} \text{b)} \quad 4y + -9z = -29 \\ \quad \quad -32y + 77z = 257 \end{array}$$

3)

Solve the linear equation system.

$$\begin{array}{l} \text{a)} \quad \begin{array}{l} -7x_1 + 9x_2 + -10x_3 + 7x_4 = 123 \\ -7x_1 + -x_2 + -2x_3 + 5x_4 = 73 \\ 28x_1 + 24x_2 + -2x_3 + -11x_4 = -170 \\ -28x_1 + -44x_2 + 54x_3 + 30x_4 = 146 \end{array} \end{array}$$

$$\begin{array}{l} \text{b)} \quad \begin{array}{l} -5x_1 + -3x_2 + 4x_3 + -2x_4 = -42 \\ 15x_1 + 5x_2 + -17x_3 + 10x_4 = 139 \\ 20x_1 + 52x_2 + 31x_3 + -40x_4 = -51 \\ 20x_1 + 20x_2 + -21x_3 + -48x_4 = -383 \end{array} \end{array}$$

4)

Solve the linear equation system.

$$\begin{array}{l} \text{a)} \quad \begin{array}{l} 6x_1 + -9x_2 + -6x_3 + -5x_4 = 57 \\ \quad \quad 5x_2 + 4x_3 + 6x_4 = -10 \\ -42x_1 + 73x_2 + 56x_3 + 45x_4 = -371 \\ -24x_1 + 16x_2 + 44x_3 + -25x_4 = 127 \end{array} \end{array}$$

$$\begin{array}{rcccccc} & 3x_1 & + & -8x_2 & + & 4x_3 & + & -5x_4 & = & 3 \\ \text{b)} & -3x_1 & + & 16x_2 & + & -x_3 & + & 9x_4 & = & -39 \\ & -21x_1 & & & + & -51x_3 & + & 14x_4 & = & 295 \\ & -6x_1 & + & -16x_2 & + & -30x_3 & + & 32x_4 & = & 482 \end{array}$$

Good Luck!