

Lesson 106: More systems of three Equations

$$1) \begin{cases} 3y - 2z = -12 & (a) \\ 2x - 3z = -5 & (b) \\ x - 2y = 6 & (c) \end{cases}$$

$$2) \begin{cases} 3x - 3y = 9 \\ 4x + z = 5 \\ 4y + 2z = -10 \end{cases}$$

$$\begin{cases} 3y - 2z = -12 & (a) \\ 2x - 3z = -5 & (b) \\ x - 2y = 6 & (c) \end{cases}$$

$$\begin{cases} -2(b) & \begin{cases} -8x - 2z = -10 \\ 4y + 2z = -10 \end{cases} \\ c & \end{cases}$$

$$\begin{matrix} \times 3 \\ \times 4 \end{matrix} \begin{cases} -8x + 4y = -20 \\ 3x - 3y = 9 \end{cases}$$

$$b \begin{cases} 2x - 3z = -5 \\ -2x + 4y = -12 \end{cases}$$

$$\begin{matrix} (4y - 3z = -17) \cdot -2 \\ (3y - 2z = -12) \cdot 3 \end{matrix}$$

$$\begin{cases} -24x + 12y = -60 \\ 12x - 12y = 36 \\ -12x = -24 \end{cases}$$

$$\begin{cases} -8y + 6z = 34 \\ 9y - 6z = -36 \\ y = -2 \end{cases}$$

$$(a) \begin{cases} 3(2) - 3y = 9 \\ 6 - 3y = 9 \\ -3y = 3 \end{cases}$$

$$y = -1$$

$$\begin{matrix} x - 2y = 6 & 3y - 2z = -12 \\ x - (2)(-2) = 6 & 3(-2) - 2z = -12 \end{matrix}$$

$$\begin{matrix} x + 4 = 6 & -6 - 2z = -12 \\ y = 2 & -2z = -6 \\ & z = 3 \end{matrix}$$

$$(b) \begin{cases} 4(2) + z = 5 \\ 8 + z = 5 \\ z = -3 \end{cases}$$

$$(2, -2, 3)$$

$$(2, -1, -3)$$