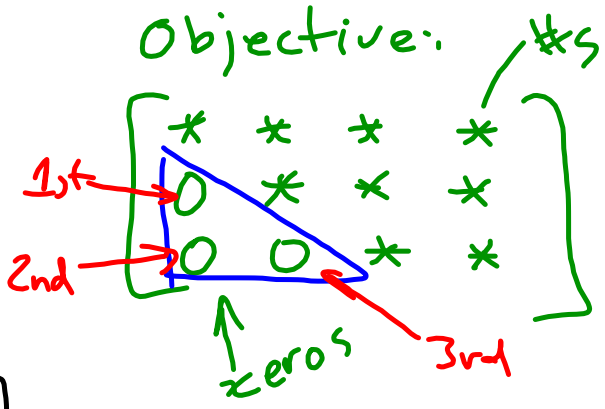
$$1x + 3y - 2z = -4$$
$$3x + 7y + z = 4$$
$$-2x + y + 7z = 7$$

$$\begin{bmatrix} 1 & 3 & -2 & -4 \\ 3 & 7 & 1 & 4 \\ -2 & 1 & 7 & 7 \end{bmatrix}$$



Rules:

1. Row can be multipled or divided by any #
2. Can add or subtract any two rows, replace one with the result

$$\begin{bmatrix} 1 & 3 & -2 & -4 \\ 3 & 7 & 1 & 4 \\ -2 & 1 & 7 & 7 \end{bmatrix} \xrightarrow{-3R_1+R_2 \to R_2} \begin{bmatrix} 1 & 3 & -2 & -4 \\ 0 & -2 & 7 & 16 \\ -2 & 1 & 7 & 7 \end{bmatrix}$$

$$\xrightarrow{2R_1+R_3 \to R_3} \begin{bmatrix} 1 & 3 & -2 & -4 \\ 0 & -2 & 7 & 16 \\ 0 & 7 & 3 & -1 \end{bmatrix} \xrightarrow{7R_2+2R_3 \to R_3} \begin{bmatrix} 1 & 3 & -2 & -4 \\ 0 & -2 & 7 & 16 \\ 0 & 0 & 55 & 110 \end{bmatrix}$$

From here, use R_2+R_3

$$\begin{bmatrix} 1 & 2 & -1 & -1 \\ 0 & -5 & 5 & 15 \\ 0 & 0 & 25 & 75 \end{bmatrix} \Longrightarrow \begin{bmatrix} 1 & 2 & -1 & -1 \\ 0 & -1 & 1 & 3 \\ 0 & 0 & 1 & 3 \end{bmatrix}$$

$25z = 75$

$z = 3$

$-5y + 5(3) = 15$

$-5y + 15 = 15$

$x+3y-2z=-4$

$-2y+7z=16$

$55z=110$

$z=2$

$-2y+7(2)=16$

$-2y=2$

$y=-1$

$x+3(-1)-2(2)=-4$

$x-3-4=-4$

$x=3$