

$T_1 = X_R + 0 \cdot X_{AC} + \dots$
 $T_2 = X_R + X_{AC}$
 $T_3 = X_R + X_{AC} + X_{TV}$

$$\begin{bmatrix} X_R & X_{AC} & X_{TV} \\ \textcircled{1} & 0 & 0 \\ \textcircled{1} & 1 & 0 \\ \textcircled{1} & 1 & 1 \end{bmatrix} \begin{bmatrix} T_1 \\ T_2 \\ T_3 \end{bmatrix}$$

Response to "How would you solve a system using Gaussian Elimination"

$R_2 - R_1 \rightarrow R_2$

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} T_1 \\ T_2 - T_1 \\ T_3 \end{bmatrix}$$

$R_3 - R_1 \rightarrow R_3$

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & \textcircled{1} & 1 \end{bmatrix} \begin{bmatrix} T_1 \\ T_2 - T_1 \\ T_3 - T_1 \end{bmatrix}$$

$R_3 - R_2 \rightarrow R_3$

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} T_1 \\ T_2 - T_1 \\ T_3 - T_2 \end{bmatrix}$$

$1 \cdot X_R = T_1$
 $1 \cdot X_{AC} = T_2 - T_1$
 $1 \cdot X_{TV} = T_3 - T_2$

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

$$\begin{array}{r} 4x + 2y = 12 \\ + 3x - 2y = 2 \\ \hline 7x = 14 \end{array}$$

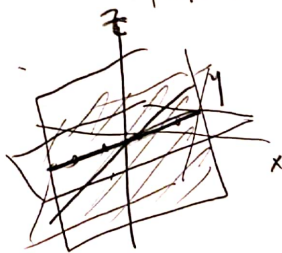
$$\begin{cases} x = 2 \\ y = 2 \end{cases}$$



(b)
$$\begin{cases} x + y + z = 2 \\ x - y = 1 \\ 2y + z = 1 \end{cases}$$

① $x + y + z = 2$
②+③ $x + y + z = 2$

infinite



(c)
$$\begin{cases} 6x + 2y = 15 \\ 3x + y = 7 \end{cases}$$

$$\begin{cases} 6x + 2y = 15 \\ 6x + 2y = 14 \end{cases}$$

