

~~$$x = \frac{17}{7}$$~~

$$x = 1$$

$$y = 2$$

$$z = -1$$

$$\begin{bmatrix} \textcircled{1} & 1 & -1 & 4 \\ 1 & -2 & 3 & -6 \\ 2 & 3 & 1 & 7 \end{bmatrix} \xrightarrow{-R_1 + R_2 \rightarrow R_2} \begin{bmatrix} 1 & 1 & -1 & 4 \\ 0 & -3 & 4 & -10 \\ 2 & 3 & 1 & 7 \end{bmatrix}$$

Augmented matrix

$$\begin{array}{l} x + y - z = 4 \\ \vdots \\ \vdots \end{array}$$

$$\xrightarrow{-2R_1 + R_3 \rightarrow R_3} \begin{bmatrix} 1 & 1 & -1 & 4 \\ 0 & -3 & 4 & -10 \\ 0 & 1 & 3 & -1 \end{bmatrix}$$

$$\begin{array}{l} \frac{1}{3}R_2 + R_3 \rightarrow R_3 \\ \vdots \\ R_2 + 3R_3 \rightarrow R_2 \end{array}$$

$$\begin{bmatrix} 1 & 1 & -1 & 4 \\ 0 & -3 & 4 & -10 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 1 & -1 & 4 \\ 0 & -3 & 4 & -10 \\ 0 & 0 & 13 & -13 \end{bmatrix}$$

one or the other, not both

row echelon form

$$\begin{array}{l} -3y - 4 = -10 \\ -3y = -6 \\ y = 2 \end{array}$$

$$x + y - z = 4$$

$$-3y + 4z = -10$$

$$13z = -13$$

$$z = -1$$

$$\begin{array}{l} x+2-(-1)=4 \\ x+3=4 \\ x=1 \end{array} \Rightarrow \begin{bmatrix} 1 & 1 & -1 & 4 \\ 0 & -3 & 4 & -10 \\ 0 & 0 & 1 & -1 \end{bmatrix}$$

$$\boxed{(1, 2, -1)} \Rightarrow \begin{bmatrix} 1 & 1 & 0 & 3 \\ 0 & -3 & 0 & -6 \\ 0 & 0 & 1 & -1 \end{bmatrix}$$

$$\Rightarrow \begin{bmatrix} 1 & 1 & 0 & 3 \\ 0 & 1 & 0 & 2 \\ 0 & 0 & 1 & -1 \end{bmatrix}$$

$$\begin{array}{l} -R_2 + R_1 \rightarrow R_1 \\ \Rightarrow \end{array} \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 2 \\ 0 & 0 & 1 & -1 \end{bmatrix}$$

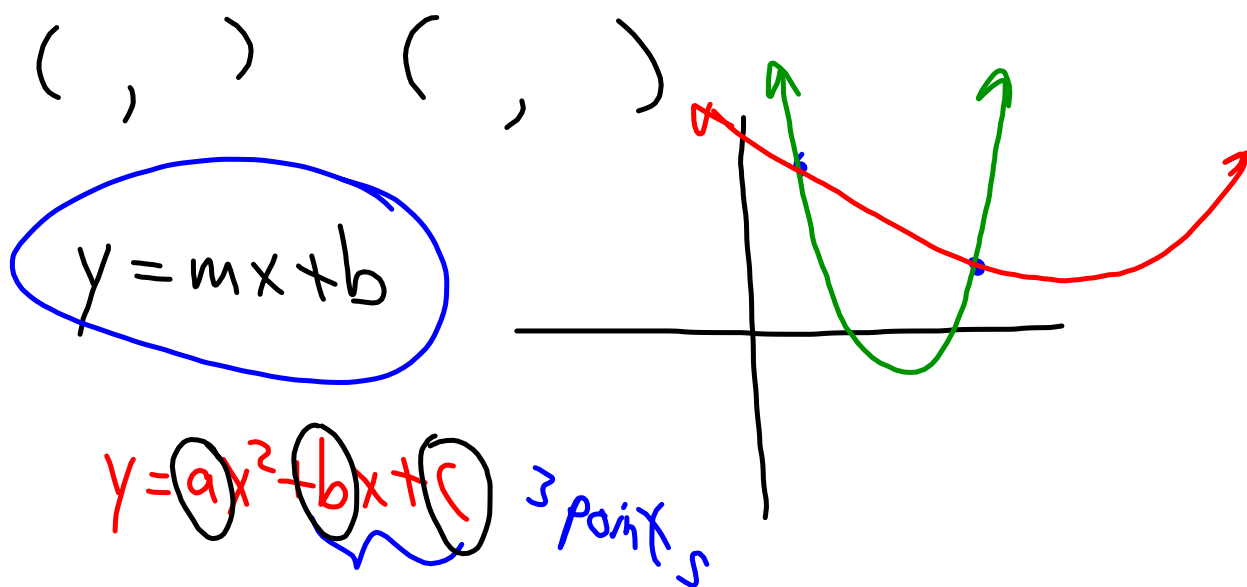
$$x = 1$$

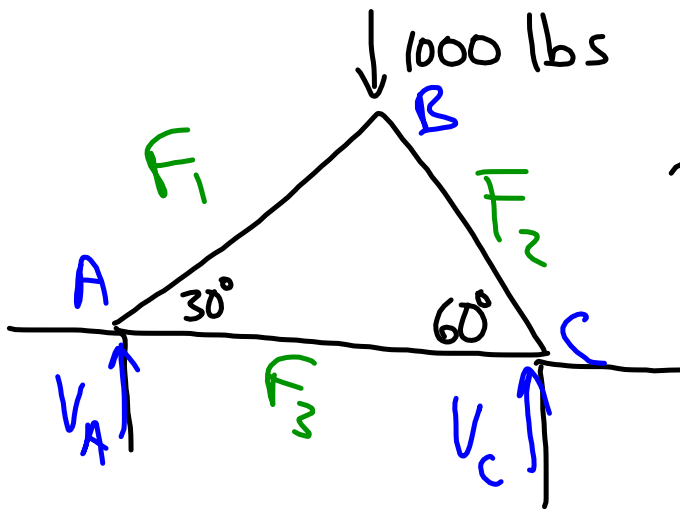
$$y = 2$$

$$z = -1$$

Reduced row
echelon
form

rref





Truss

Suggested:
1.4: 1-8 all

