① a) $\begin{pmatrix} 2 & -1 & -5 \\ 1 & 1 & -1 \\ 6 & 5 & -2 \end{pmatrix} \cdot \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} -20 \\ -4 \\ 2 \end{pmatrix}$

coëfficiënten matrix

kolommatrix v/d onbekenden

kolommatrix v/d bekenden

① $\left(\begin{array}{ccc|c} 2 & -1 & -5 & -20 \\ 1 & 1 & -1 & -4 \\ 6 & 5 & -2 & 2 \end{array}\right) \overset{R_{1,2}}{\sim} \left(\begin{array}{ccc|c} 1 & 1 & -1 & -4 \\ 2 & -1 & -5 & -20 \\ 6 & 5 & -2 & 2 \end{array}\right)$

$\begin{matrix} R_2-2R_1 \\ \sim \\ R_3-6R_1 \end{matrix} \left(\begin{array}{ccc|c} 1 & 1 & -1 & -4 \\ 0 & -3 & -3 & -12 \\ 0 & -1 & 4 & 26 \end{array}\right) \overset{-\frac{1}{3}R_2}{\sim} \left(\begin{array}{ccc|c} 1 & 1 & -1 & -4 \\ 0 & 1 & 1 & 4 \\ 0 & -1 & 4 & 26 \end{array}\right)$

$\begin{matrix} R_1-R_2 \\ \sim \\ R_3+R_2 \end{matrix} \left(\begin{array}{ccc|c} 1 & 0 & -2 & -8 \\ 0 & 1 & 1 & 4 \\ 0 & 0 & 5 & 30 \end{array}\right) \overset{\frac{1}{5}R_3}{\sim} \left(\begin{array}{ccc|c} 1 & 0 & -2 & -8 \\ 0 & 1 & 1 & 4 \\ 0 & 0 & 1 & 6 \end{array}\right)$

$\begin{matrix} R_1+2R_3 \\ \sim \\ R_2-R_3 \end{matrix} \left(\begin{array}{ccc|c} 1 & 0 & 0 & 4 \\ 0 & 1 & 0 & -2 \\ 0 & 0 & 1 & 6 \end{array}\right)$

$V = \{(4, -2, 6)\}$

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

$V = \{(4+3t, 5-t, t) \mid t \in \mathbb{R}\}$

③ a = aantal kg dat Anke draagt

k = " " " " Kato "

t = " " " " Tuur "

$$\begin{cases} a+1 = t \\ a+1 = 2(k-1) = 2k-2 \\ t+2 = (a-1)+(k-1) \end{cases}$$

$$\begin{cases} a-t = -1 \\ a-2k = -3 \\ -a-k+t = -4 \end{cases}$$

$$\left(\begin{array}{ccc|c} 1 & 0 & -1 & -1 \\ 1 & -2 & 0 & -3 \\ -1 & -1 & 1 & -4 \end{array}\right) \xrightarrow{\text{RREF}} \left(\begin{array}{ccc|c} 1 & 0 & 0 & 7 \\ 0 & 1 & 0 & 5 \\ 0 & 0 & 1 & 8 \end{array}\right)$$

Antw: Anke draagt 7 kg

Kato " 5 kg

Tuur " 8 kg