$$\begin{array}{rrrrr} 3x & +y & +2z & =0 & (G_0) \\ 4x & +2y & +3z & =-4 & (G_1) \\ 2x & +4y & -z & =-4 & (G_2) \end{array}$$

Variable y eliminieren:

$$\begin{array}{rrrrr} 2(G_0)-(G_1): & 2x & +z & =4 & (G_0') \\ 2(G_1)-(G_2): & 6x & +7z & =-4 & (G_1') \end{array}$$

Variable x eliminieren:

$$\begin{array}{rrrr} 3(G_0')-(G_1'): & -4z & =16 & (G_0'') \end{array}$$

Aus (G_0'') folgt: $z=-4$. Eingesetzt in (G_0'):

$$\begin{aligned} 2x+\cdot(-4) &= 4 && |\text{TU} \\ 2x-4 &= 4 && |+4 \\ 2x &= 8 && |:2 \\ x &= 4 \end{aligned}$$

Eingesetzt in (G_0):

$$\begin{aligned} 3\cdot 4+y+2\cdot(-4) &= 0 && |\text{TU} \\ y+4 &= 0 && |-4 \\ y &= -4 \end{aligned}$$

Lösung: $x=4$, $y=-4$, $z=-4$

f)

$$\begin{array}{rrrrr} -2x & -3y & +8z & =1 & (G_0) \\ -2x & -y & +4z & =3 & (G_1) \\ 4x & -6y & +3z & =1 & (G_2) \end{array}$$

Variable x eliminieren:

$$\begin{array}{rrrrr} (G_0)-(G_1): & -2y & +4z & =-2 & (G_0') \\ 2(G_1)+(G_2): & -8y & +11z & =7 & (G_1') \end{array}$$

Variable y eliminieren:

$$\begin{array}{rrrr} 4(G_0')-(G_1'): & 5z & =-15 & (G_0'') \end{array}$$

Aus (G_0'') folgt: $z=-3$. Eingesetzt in (G_0'):

$$\begin{aligned} -2y+4\cdot(-3) &= -2 && |\text{TU} \\ -2y-12 &= -2 && |+12 \\ -2y &= 10 && |:-2 \\ y &= -5 \end{aligned}$$