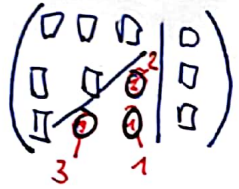
a) $3a+5b+2c=19$
$2a+8b+2c=24$
$4a+b+c=9$



b) $-3a+2b-3c=-10$
$6a+b-2c=-5$
$1{,}5a-2b+5c=19{,}5$

c) $5a+4b-2c=5{,}3$
$-2a+6b+4c=-3{,}8$
$6a-3b+2c=0{,}4$

a)

$$\left(\begin{array}{ccc|c} 3 & 5 & 2 & 19 \\ 2 & 8 & 2 & 24 \\ 4 & 1 & 1 & 9 \end{array}\right) \begin{array}{l} \cdot 1 \\ \cdot 2 \end{array}$$

$$\left(\begin{array}{ccc|c} 3 & 5 & 2 & 19 \\ 2 & 8 & 2 & 24 \\ 8 & 2 & 2 & 18 \end{array}\right) \leftarrow -$$

$$\left(\begin{array}{ccc|c} 3 & 5 & 2 & 19 \\ 2 & 8 & 2 & 24 \\ -6 & 6 & 0 & 6 \end{array}\right) \leftarrow -$$

$$\left(\begin{array}{ccc|c} 3 & 5 & 2 & 19 \\ -1 & 3 & 0 & 5 \\ -6 & 6 & 0 & 6 \end{array}\right) \cdot 2$$

$$\left(\begin{array}{ccc|c} 3 & 5 & 2 & 19 \\ -2 & 6 & 0 & 10 \\ -6 & 6 & 0 & 6 \end{array}\right) \leftarrow -$$

$$\left(\begin{array}{ccc|c} 3 & 5 & 2 & 19 \\ -2 & 6 & 0 & 10 \\ 4 & 0 & 0 & 4 \end{array}\right)$$

$4a = 4 \mid :4$

$a = 1$

$-2a+6b=10$

$-2\cdot 1+6b=10$

$-2+6b=10 \mid +2$

$6b=12 \mid :6$

$b=2$

$3a+5b+2c=19$

$3\cdot 1+5\cdot 2+2c=19$

$3+10+2c=19$

$13+2c=19 \mid -13$

$2c=6 \mid :2$

$c=3$

$$\left(\begin{array}{ccc|c} -3 & 2 & -3 & -10 \\ 6 & 1 & -2 & -5 \\ 1{,}5 & -2 & 5 & 19{,}5 \end{array}\right) \begin{array}{l} \cdot 5 \\ \cdot 2 \end{array}$$

$$\left(\begin{array}{ccc|c} -3 & 2 & -3 & -10 \\ 30 & 5 & -10 & -25 \\ 3 & -4 & 10 & 39 \end{array}\right) \leftarrow +$$

$$\left(\begin{array}{ccc|c} -3 & 2 & -3 & -10 \\ 30 & 5 & -10 & -25 \\ 33 & 1 & 0 & 14 \end{array}\right) \begin{array}{l} \cdot 10 \\ \cdot 3 \end{array}$$

$$\left(\begin{array}{ccc|c} -30 & 20 & -30 & -100 \\ 90 & 15 & -30 & -75 \\ 33 & 1 & 0 & 14 \end{array}\right) \leftarrow -$$

$$\left(\begin{array}{ccc|c} -30 & 20 & -30 & -100 \\ 120 & -5 & 0 & 25 \\ 33 & 1 & 0 & 14 \end{array}\right) \begin{array}{l} \cdot 1 \\ \cdot 5 \end{array}$$

$$\left(\begin{array}{ccc|c} -30 & 120 & -30 & -100 \\ 120 & -5 & 0 & 25 \\ 165 & 5 & 0 & 70 \end{array}\right) \leftarrow +$$

$$\left(\begin{array}{ccc|c} -30 & 20 & -30 & -100 \\ 120 & -5 & 0 & 25 \\ 285 & 0 & 0 & 95 \end{array}\right)$$

$285a = 95 \mid :285$

$a = \frac{1}{3} = 0{,}\overline{3}$

$120\cdot a - 5\cdot b = 25$

$120\cdot \frac{1}{3} - 5b = 25$

$40-5b=25 \mid -40$

$-5b=-15 \mid :-5$

$b=3$

$-30\cdot a+20b-30c=-100$

$-30\cdot \frac{1}{3}+20\cdot 3-30c=-100$

$-10+60-30c=-100$

$50-30c=-100 \mid -50$

$-30c=-150 \mid :(-30)$

$c=5$

$a=\frac{1}{3}$ $b=3$ $c=5$

d)

$$\left(\begin{array}{ccc|c} 5 & 4 & -2 & 5{,}3 \\ -2 & 6 & 4 & -3{,}8 \\ 6 & -3 & \textcircled{2} & 0{,}4 \end{array}\right) \cdot 2$$

$$\left(\begin{array}{ccc|c} 5 & 4 & -2 & 5{,}3 \\ -2 & 6 & 4 & -3{,}8 \\ 12 & -6 & 4 & 0{,}8 \end{array}\right) \rightarrow -$$

$$\left(\begin{array}{ccc|c} 5 & 4 & -2 & 5{,}3 \\ -2 & 6 & 4 & -3{,}8 \\ 14 & -12 & 0 & 4{,}6 \end{array}\right) \cdot 2$$

$$\left(\begin{array}{ccc|c} 10 & 8 & -4 & 10{,}6 \\ -2 & 6 & 4 & -3{,}8 \\ 14 & -12 & 0 & 4{,}6 \end{array}\right) \rightarrow +$$

$$\left(\begin{array}{ccc|c} 10 & 8 & -4 & 10{,}6 \\ 8 & 14 & 0 & 6{,}8 \\ 14 & -12 & 0 & 4{,}6 \end{array}\right) \begin{array}{l} \cdot 12 \\ \cdot 14 \end{array}$$

$$\left(\begin{array}{ccc|c} 10 & 8 & -4 & 10{,}6 \\ 96 & 168 & 0 & 81{,}6 \\ 196 & -168 & 0 & 64{,}4 \end{array}\right) \rightarrow +$$

$$\left(\begin{array}{ccc|c} 10 & 8 & -4 & 10{,}6 \\ 96 & 168 & 0 & 81{,}6 \\ 292 & 0 & 0 & 146 \end{array}\right)$$

$292a = 146 \mid :292$

$a = 0{,}5$

$96 \cdot 0{,}5 + 168b = 81{,}6$

$48 + 168b = 81{,}6 \mid -48$

$168b = 33{,}6$

$b = 0{,}2$

$10 \cdot 0{,}5 + 8 \cdot 0{,}2 - 4c = 10{,}6$

$5 + 1{,}6 - 4c = 10{,}6$

$6{,}6 - 4c = 10{,}6 \mid -6{,}6$

$-4c = 4 \mid :-4$

$c = -1$