Exos-Chronos 10

Résoudre les systèmes suivants :

Exercice 1. $\begin{cases} 3x+y+2z=3 \\ 2x+3y+z=4 \\ x+2y+3z=5 \end{cases}$

Exercice 2. $\begin{cases} x+y+z+t=1 \\ x+2y+2z+4t=2 \\ x+3y+3z+7t=4 \end{cases}$

Exercice 3. $\begin{cases} x+2y-3z=1 \\ 2x+y+z=0 \\ x-y+4z=-1 \end{cases}$

Exercice 4. $\begin{cases} x+y+3z+t=1 \\ 2x+3y-t=3 \end{cases}$

Exercice 5. $\begin{cases} x+2y-3z=4 \\ x+3y+z=11 \\ 2x+5y-4z=13 \\ 4x+11y=37 \end{cases}$

Exercice 6. $\begin{cases} x-y+z-t=1 \\ x+y-z-t=-1 \\ x+y+z-t=0 \\ x-y-z+t=2 \end{cases}$

Exercice 7. $\begin{cases} x-2y+z-3t=1 \\ 2x+y-z+t=-1 \end{cases}$

Les ensembles des solutions :

1. $\{(0,1,1)\}$
2. $\emptyset$.
3. $\{(-\frac{1}{3}-\frac{5}{3}z, \frac{2}{3}+\frac{7}{3}z, z) | z \in \mathbb{R}\}$.
4. $\{(-9z-4t, 1+6z+3t, z, t) | (z,t) \in \mathbb{R}^2\}$
5. $\{(1,3,1)\}$
6. $\{(1, -\frac{1}{2}, \frac{1}{2}, 1)\}$.
7. $\{(-\frac{1}{5}+\frac{1}{5}z+\frac{1}{5}t, -\frac{3}{5}+\frac{3}{5}z-\frac{7}{5}t, z, t) | (z,t) \in \mathbb{R}^2\}$.