

$$\textcircled{7} \left\{ \begin{array}{l} x+y+z=2 \\ 2x+2y+2z=4 \\ 3x+3y+3z=1 \end{array} \right. \Leftrightarrow \left. \begin{array}{l} 2L_1 - L_2 \\ 3L_1 - L_3 \end{array} \right\} \begin{array}{l} x+y+z=2 \\ 0=0 \\ 0=5 \text{ impossible} \end{array} \quad \boxed{S = \emptyset}$$

$$\boxed{8} \left\{ \begin{array}{l} x+y+z+t=4 \\ 2x-y+z-2t=0 \\ 3x+2z-t=4 \\ x-2y+3t=2 \end{array} \right. \Leftrightarrow \left. \begin{array}{l} 2L_1 - L_2 \\ 3L_1 - L_3 \\ 4 - L_4 \end{array} \right\} \begin{array}{l} x+y+z+t=4 \\ 3y+3z+4t=8 \\ \cancel{3y+z+4t=8} \\ 3y+z-t=2 \end{array}$$

$$\Leftrightarrow \left\{ \begin{array}{l} x+y+z+t=4 \\ 3y+z+4t=8 \\ 6t=6 \end{array} \right. \Leftrightarrow \left\{ \begin{array}{l} x+y+z=3 \\ 3y+z=4 \\ t=1 \end{array} \right.$$

4 inconnues et 3 eq : dimension 1 ou paramètre $y = t$

$$z = 4 - 3t \quad x = 3 - t - (4 - 3t) = 2t - 1$$

$$\boxed{S = \{ (2t-1, t, 4-3t, 1) \mid t \in \mathbb{R} \}}$$