TD 04

Exercise 1

Solve the following system :

$$S : \begin{cases} x + y + z = 3 \\ 2x + y + z = 2 \\ x + 2y + z = 1 \end{cases}$$

Exercise 2

Solve the following system :

$$S : \begin{cases} 3x + y - 2z + 3t = 0 \\ -x + 2y - 4z + 6t = 2 \\ 2x - y + 2z - 3t = 0 \end{cases}$$

Exercise 3

Depending on the values of a, solve the following systems :

$$S_1 : \begin{cases} ax + y = 2 \\ (a^2 + 1)x + 2ay = 1 \end{cases} \quad , \quad S_2 : \begin{cases} (a + 1)x + (a - 1)y = 1 \\ (a - 1)x + (a + 1)y = 1 \end{cases}$$

Exercise 4

Consider the system (S),

$$S : \begin{cases} x - my + m^2 z = 2m \\ mx - m^2 y + mz = 2m \\ mx + y - m^3 z = 1 - m \end{cases}$$

Solve (S), specifying the values of m for which it is a Cramer system.