University of DJilaly Bounaama – khmis meliana
Mathematics 2
Faculty of Economic, Commercial and Management Sciences

First

year

Series 04: (**Sentences of linear equations**)

First exercise:

Let us have the matrix A

$$A = \begin{pmatrix} 1 & 5 \\ 2 & 7 \end{pmatrix}$$

1–Prove that the matrix A is invertible, and find A^{-1}.

2– Find solutions to the sentence (S) in two different ways:

$$S: \quad A \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 4 \\ 3 \end{pmatrix}$$

Second exercise:

Solve the following sentences:

$$\begin{cases} 5x - 4y = 19 \\ 6x + 5y = 13 \end{cases} \quad ; \quad \begin{cases} 8x - 5y = 6 \\ 12x + y9 = 9 \end{cases} \quad ;$$

$$\begin{cases} 3x - y + 0z = 1 \\ 2x + 4y + 5z = -2 \\ 3x + y + 2z = 3 \end{cases} \quad ;$$

Third exercise:

Solve the following sentences:

$$S_1 \begin{cases} x + y + z = 1 \\ x + y + z = 1 \\ x + y + z = -2 \end{cases} \quad ; \quad S_3 \begin{cases} -2x + y + z = 1 \\ x - 2y + z = 2 \\ x + y - 2z = 4 \end{cases}$$

Using the (Garden–Ghos) method, find the joint solution of the following set of linear equations:

$$\begin{aligned} x + y + z &= 2 \\ 2x + 5y + 2z &= 2 \\ x - 3y + 2z &= 14 \end{aligned}$$