

Assignment 2

Due date: 18 March 2021

TA: 劉孟鑫 E814 (15:10~16:00)

1. Solve the system with variables x_1, x_2, x_3 :

$$\begin{bmatrix} 1 & -3 & 4 & 7 \\ 0 & 1 & 2 & 2 \\ 0 & 0 & 1 & 5 \end{bmatrix}$$

2. Solve the system with variables x_1, x_2, x_3, x_4 :

$$\begin{bmatrix} 1 & 0 & 8 & -5 & 6 \\ 0 & 1 & 4 & -9 & 3 \\ 0 & 0 & 1 & 1 & 2 \end{bmatrix}$$

3. Solve the system with variables x_1, x_2, x_3, x_4, x_5 :

$$\begin{bmatrix} 1 & 7 & -2 & 0 & -8 & -3 \\ 0 & 0 & 1 & 1 & 6 & 5 \\ 0 & 0 & 0 & 1 & 3 & 9 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

4. Solve the system by Gaussian elimination.

$$\begin{aligned} x_1 &+ x_2 &+ 2x_3 &= 8 \\ -x_1 &- 2x_2 &+ 3x_3 &= 1 \\ 3x_1 &- 7x_2 &+ 4x_3 &= 10 \end{aligned}$$

5. Solve the system by Gaussian elimination.

$$\begin{aligned} 2x_1 &+ 2x_2 &+ 2x_3 &= 0 \\ -2x_1 &+ 5x_2 &+ 2x_3 &= 1 \\ 8x_1 &+ x_2 &+ 4x_3 &= -1 \end{aligned}$$