

Punto 3

Resultado exacto según Maple:

```
A := matrix(3, 3, [4, -1, -1, -1, 4, -1, -1, -1, 4]);
```

$$A := \begin{bmatrix} 4 & -1 & -1 \\ -1 & 4 & -1 \\ -1 & -1 & 4 \end{bmatrix}$$

```
b := matrix(3, 1, [1, 2, 3]);
```

$$b := \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$$

```
A_b := augment(A, b);
```

$$A_b := \begin{bmatrix} 4 & -1 & -1 & 1 \\ -1 & 4 & -1 & 2 \\ -1 & -1 & 4 & 3 \end{bmatrix}$$

```
gausselim(A_b);
```

$$\begin{bmatrix} 4 & -1 & -1 & 1 \\ 0 & -\frac{5}{4} & \frac{15}{4} & \frac{13}{4} \\ 0 & 0 & 10 & 12 \end{bmatrix}$$

```
gaussjrd(A_b);
```

$$\begin{bmatrix} 1 & 0 & 0 & \frac{4}{5} \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & \frac{6}{5} \end{bmatrix}$$

Resultado según el algoritmo de Gauss (Python):

```
Resolviendo matriz por definicion: A*x = B
A = [[ 4 -1 -1]
      [-1 4 -1]
      [-1 -1 4]]
B = [1, 2, 3]

El determinante es = 50.0

El vector solucion X es:
0.8
1.0
1.2
```

Resultado según el algoritmo de Cramer (Python):

```
PS C:\Users\user> & "C:/Program Files (x86)/Python/Python37-32/Python.exe" C:/Program Files (x86)/Python/Python37-32/Scripts/Python.exe C:/Program Files (x86)/Python/Python37-32/Scripts/Python.exe /Metodo_Cramer.py
Matrices
A = [[ 4 -1 -1]
     [-1 4 -1]
     [-1 -1 4]]
B = [1 2 3]
Solucion Directa Exacta:
X_0 = 0.8
X_1 = 1.0
X_2 = 1.2
Solucion por Cramer:
El vector solucion X es:
X_0 = 0.8
X_1 = 1.0
X_2 = 1.2
PS C:\Users\user> 
```