EcuacionesLineales

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1 Ecuaciones Lineales

1.0.1 Trabajo realizado por: Jessica Naomi Millan Sánchez

1.0.2 Graficación Computacional

1.0.3 Profesora: Hazem Álvarez Rodríguez

1.0.4 Clase del 11 de noviembre de 2024

1.1 Ejemplo

[2]:
```
import numpy as np
```

[7]:
```
A4 = np.matrix([[3,2,-1],[2,-2,4],[-1,0.5,-1]])
b4 = np.matrix([[1],[-2],[0]])
```

[10]:
```
x4 = (A4**-1)*b4
determinante4 = np.linalg.det(A)
```

[11]:
```
# Mostrar los resultados
print("Forma matricial A x = b:")
print("Matriz A:")
print(A4)
print("Vector b:")
print(b4)
print("\nDeterminante de A:", determinante4)
print("\nValor de x:")
print(x4)
```

```
Forma matricial A x = b:
Matriz A:
[[ 3.   2.  -1. ]
 [ 2.  -2.   4. ]
 [-1.   0.5 -1. ]]
Vector b:
[[ 1]
 [-2]
 [ 0]]
```

```
Determinante de A: -3.0000000000000036

Valor de x:
[[ 1.]
 [-2.]
 [-2.]]
```

1.2 Actividad

1.2.1 1. A = (9)

[6]:
```
A = np.matrix([[9]])

print("this is A\n",A)
det = np.linalg.det(A)
print("this is the determinante\n",det)
```

```
this is A
 [[9]]
this is the determinante
 9.000000000000002
```

1.2.2 2. B = ([4 -1] [-2 0])

[3]:
```
A = np.matrix([[4, -1],[-2, 0]])

print("this is A\n",A)
det = np.linalg.det(A)
print("this is the determinante\n",det)
```

```
this is A
 [[ 4 -1]
 [-2  0]]
this is the determinante
 -2.0
```

1.2.3 2. C = ([5 0 2] [3 1 1] [0 1 2])

[4]:
```
A = np.matrix([[5, 0, 0], [3, 1, 1],[0, 1, 2]])

print("this is A\n",A)
det = np.linalg.det(A)
print("this is the determinante\n",det)
```

```
this is A
 [[5 0 0]
 [3 1 1]
 [0 1 2]]
```

```
this is the determinante
 4.999999999999999
```