ASSIGNMENT 3

Q1.

```
#Numpy
#install cmd--pip install numpy
import numpy as np
arr = np.array([0,0,0], dtype = int)

for i in range(3):
  n = int(input("Enter the array element: "))
  arr[i] = n

print(arr)

Vmatrix = np.array([[0,0,0],[0,0,0],[0,0,0]], dtype = int)
for i in range(len(arr)):
  for j in range(len(arr)):
    Vmatrix[i][j] = arr[i] ** j

print(Vmatrix)
```

```
Enter the array element: 1
Enter the array element: 2
Enter the array element: 3
[1 2 3]
[[1 1 1]
 [1 2 4]
 [1 3 9]]
```

Q2.

2.Perform the following operations on a matrix$A$=[53269−3174]a.FindInverse of matrixA.b.Find Kroneckerproductof Awith B= [3−12−5]c.Find determinant of matrixA

```
[ ] from scipy.linalg import*
    import numpy as np
    a=np.array([[5,3,2], [6,9,-3], [1,7,3]])
    inv(a)
```

```
array([[ 0.19753086,  0.02057613, -0.11111111],
       [-0.08641975,  0.05349794,  0.11111111],
       [ 0.13580247, -0.13168724,  0.11111111]])
```

```
[ ] det(a)
```

```
243.0
```

```
[ ] kron(np.array([[5,3,2], [6,9,-3], [1,7,3]]), np.array([[3,-1,2-5]]))
```

```
array([[ 15,  -5, -15,   9,  -3,  -9,   6,  -2,  -6],
       [ 18,  -6, -18,  27,  -9, -27,  -9,   3,   9],
       [  3,  -1,  -3,  21,  -7, -21,   9,  -3,  -9]])
```