(a)

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

In [17]:
```
matrix = np.array([[1,2,3],[4,5,6],[7,8,9]])
```

In [20]:
```
matrix
```

Out[20]:
```
array([[1, 2, 3],
       [4, 5, 6],
       [7, 8, 9]])
```

In [21]:
```
matrix.T
```

Out[21]:
```
array([[1, 4, 7],
       [2, 5, 8],
       [3, 6, 9]])
```

(b)

In [11]:
```
identity = np.eye(4,3)
```

In [12]:
```
identity
```

Out[12]:
```
array([[1., 0., 0.],
       [0., 1., 0.],
       [0., 0., 1.],
       [0., 0., 0.]])
```

c

In [ ]:
```
array = np.arange(10,20)
```

In [15]:
```
array
```

Out[15]:
```
array([10, 11, 12, 13, 14, 15, 16, 17, 18, 19])
```

In [13]:
```
array.reshape(5,2)
```

Out[13]:
```
array([[10, 11],
       [12, 13],
       [14, 15],
       [16, 17],
       [18, 19]])
```

(d)

In [22]:
```
array1 = np.array([1,2,3,41,2,3,4,"ram","shyam","ram","krishna","krishna"])
```

In [23]:
```
array1
```

Out[23]:
```
array(['1', '2', '3', '41', '2', '3', '4', 'ram', 'shyam', 'ram',
       'krishna', 'krishna'], dtype='<U11')
```

In [24]:
```
np.unique(array1)
```

Out[24]:
```
array(['1', '2', '3', '4', '41', 'krishna', 'ram', 'shyam'], dtype='<U11')
```

In [ ]:
```

```