```
In [1]: import numpy as np
```

```
In [2]: x = np.array([3,2,5])
        x
```
```
Out[2]: array([3, 2, 5])
```

```
In [10]: x = np.ones((3,2), dtype = int)
         x
```
```
Out[10]: array([[1, 1],
                [1, 1],
                [1, 1]])
```

```
In [6]: x.dtype
```
```
Out[6]: dtype('int32')
```

```
In [9]: np.eye(3)
```
```
Out[9]: array([[1., 0., 0.],
               [0., 1., 0.],
               [0., 0., 1.]])
```

```
In [12]: f = np.ones((3,2,4))
         f
         f.shape
```
```
Out[12]: (3, 2, 4)
```

```
In [13]: f = np.zeros(3)
         f
```
```
Out[13]: array([0., 0., 0.])
```

```
In [17]: np.identity((4))
```
```
Out[17]: array([[1., 0., 0., 0.],
                [0., 1., 0., 0.],
                [0., 0., 1., 0.],
                [0., 0., 0., 1.]])
```

```
In [19]: x = np.eye(5, k = 2)
         x
```
```
Out[19]: array([[0., 0., 1., 0., 0.],
                [0., 0., 0., 1., 0.],
                [0., 0., 0., 0., 1.],
                [0., 0., 0., 0., 0.],
                [0., 0., 0., 0., 0.]])
```

```
In [20]: y = np.eye(6, k = -1)
         y
```

```
Out[20]: array([[0., 0., 0., 0., 0., 0.],
                [1., 0., 0., 0., 0., 0.],
                [0., 1., 0., 0., 0., 0.],
                [0., 0., 1., 0., 0., 0.],
                [0., 0., 0., 1., 0., 0.],
                [0., 0., 0., 0., 1., 0.]])
```

```
In [29]: x = np.arange(10)
         x
```

```
Out[29]: array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10])
```

```
In [30]: x = np.arange(2,12,3)
         x
```

```
Out[30]: array([ 2,  5,  8, 11])
```

first is the start, second is the stop, third is the step

```
In [31]: x = np.random.exponential()
         x
```

```
Out[31]: 0.7358415679852194
```

```
In [32]: x = np.random.randint(2,12)
         x
```

```
Out[32]: 10
```

```
In [36]: x = np.random.rand()
         x
```

```
Out[36]: 0.979021713909433
```

```
In [41]: x = np.random.randint(2,10, 3)
         x
```

```
Out[41]: array([4, 9, 5])
```

```
In [42]: x = np.random.rand(2)
         x
```

```
Out[42]: array([0.95337969, 0.74258714])
```

In [45]:
```python
x = np.random.rand(3,4,2)
x
```

Out[45]:
```
array([[[0.9210915 , 0.8063311 ],
        [0.21890295, 0.95034989],
        [0.04797409, 0.18615829],
        [0.72852419, 0.28996338]],

       [[0.63704235, 0.59045179],
        [0.29447004, 0.51061356],
        [0.73586814, 0.07804226],
        [0.09411747, 0.04875341]],

       [[0.37877149, 0.21935147],
        [0.1198014 , 0.86811901],
        [0.23712229, 0.65844133],
        [0.04173835, 0.84779909]]])
```

In [47]:
```python
x = np.array([5,2,8])
y = np.array([4,5,7])
z = np.array([2,3,1])
m = x,y,z
m
```

Out[47]: (array([5, 2, 8]), array([4, 5, 7]), array([2, 3, 1]))

In [49]:
```python
x = np.array([(1,2,3), (4,3,8)])
x.shape
```

Out[49]:
```
array([[1, 2, 3],
       [4, 3, 8]])
```

In [53]:
```python
x = np.array([(1,2,3), (4,3,8)])
x.ndim
```

Out[53]: 2

In [54]:
```python
x = np.array([(1,2,3), (4,3,8)])
x.reshape(6)
```

Out[54]: array([1, 2, 3, 4, 3, 8])

In [58]:
```python
x = np.array([(1,2,3), (4,3,8)])
x.ravel()
```

Out[58]: array([1, 2, 3, 4, 3, 8])

In [ ]: