```
In [110]: import numpy as np

In [111]: a=np.zeros(10)
          a

Out[111]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

In [112]: a=np.ones(10)
          a

Out[112]: array([1., 1., 1., 1., 1., 1., 1., 1., 1., 1.])

In [113]: b=a*5
          b

Out[113]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])

In [114]: a=np.arange(10,51)
          a

Out[114]: array([10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26,
                 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43,
                 44, 45, 46, 47, 48, 49, 50])

In [115]: a=np.arange(10,51,2)
          a

Out[115]: array([10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42,
                 44, 46, 48, 50])

In [116]: a=np.arange(0,9)
          b=a.reshape(3,3)
          b

Out[116]: array([[0, 1, 2],
                 [3, 4, 5],
                 [6, 7, 8]])
```

```python
In [117]: a=np.eye(3)
          a
```

```
Out[117]: array([[1., 0., 0.],
                 [0., 1., 0.],
                 [0., 0., 1.]])
```

```python
In [118]: a=np.random.rand(1)
          a
```

```
Out[118]: array([0.75856058])
```

```python
In [119]: a=np.random.randn(25)
          a
```

```
Out[119]: array([-1.24153898,  0.313183  ,  0.25468278, -0.78263279, -0.11561927,
                 -1.2947466 ,  0.52564822,  0.30310379, -1.30790844,  0.96177167,
                 -1.48682403, -0.27229576, -1.2330205 ,  0.60973082,  1.24655065,
                  0.73250991,  0.2970374 ,  0.03335235, -0.16668952,  0.5398687 ,
                  1.06716553, -0.83418296, -0.66155757, -0.00976816, -1.34819858])
```

```python
In [120]: a=np.arange(0.01,1.01,0.01)
          a
          b=a.reshape(10,10)
          b
```

```
Out[120]: array([[0.01, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.1 ],
                 [0.11, 0.12, 0.13, 0.14, 0.15, 0.16, 0.17, 0.18, 0.19, 0.2 ],
                 [0.21, 0.22, 0.23, 0.24, 0.25, 0.26, 0.27, 0.28, 0.29, 0.3 ],
                 [0.31, 0.32, 0.33, 0.34, 0.35, 0.36, 0.37, 0.38, 0.39, 0.4 ],
                 [0.41, 0.42, 0.43, 0.44, 0.45, 0.46, 0.47, 0.48, 0.49, 0.5 ],
                 [0.51, 0.52, 0.53, 0.54, 0.55, 0.56, 0.57, 0.58, 0.59, 0.6 ],
                 [0.61, 0.62, 0.63, 0.64, 0.65, 0.66, 0.67, 0.68, 0.69, 0.7 ],
                 [0.71, 0.72, 0.73, 0.74, 0.75, 0.76, 0.77, 0.78, 0.79, 0.8 ],
                 [0.81, 0.82, 0.83, 0.84, 0.85, 0.86, 0.87, 0.88, 0.89, 0.9 ],
                 [0.91, 0.92, 0.93, 0.94, 0.95, 0.96, 0.97, 0.98, 0.99, 1.  ]])
```

```python
In [121]: a=np.linspace(0,1,20)
          a
```

```
Out[121]: array([0.        , 0.05263158, 0.10526316, 0.15789474, 0.21052632,
                 0.26315789, 0.31578947, 0.36842105, 0.42105263, 0.47368421,
                 0.52631579, 0.57894737, 0.63157895, 0.68421053, 0.73684211,
                 0.78947368, 0.84210526, 0.89473684, 0.94736842, 1.        ])
```

```
In [122]: mat=np.arange(1,26).reshape(5,5)
          mat

Out[122]: array([[ 1,  2,  3,  4,  5],
                 [ 6,  7,  8,  9, 10],
                 [11, 12, 13, 14, 15],
                 [16, 17, 18, 19, 20],
                 [21, 22, 23, 24, 25]])

In [123]: mat[2:,1:]

Out[123]: array([[12, 13, 14, 15],
                 [17, 18, 19, 20],
                 [22, 23, 24, 25]])

In [124]: mat[3,4]

Out[124]: 20

In [125]: mat[0:3,1:2]

Out[125]: array([[ 2],
                 [ 7],
                 [12]])

In [126]: mat[4:]

Out[126]: array([[21, 22, 23, 24, 25]])

In [127]: mat[3:]

Out[127]: array([[16, 17, 18, 19, 20],
                 [21, 22, 23, 24, 25]])

In [128]: mat.sum()

Out[128]: 325

In [129]: np.std(mat)

Out[129]: 7.211102550927978

In [130]: np.sum(mat, axis=0)

Out[130]: array([55, 60, 65, 70, 75])
```