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Task-01

```
import numpy as np
```

```
z=np.zeros(10)  
z
```

```
z=np.ones(10)  
z
```

```
z=np.ones(10)*5  
z
```

```
z=np.arange(10,51)  
z
```

```
z=np.arange(10,51,2)  
z
```

```
z=np.arange(9).reshape(3,3)  
z
```

```
x=np.eye(3)  
x
```

```
z=np.random.rand()  
z
```

```
z=np.random.rand(25)  
z
```

```
z=np.arange(0.01,1 +0.01, 0.01).reshape(10, 10)  
z
```

```
z=np.linspace(0, 1, 20)  
z
```

```
mat = np.arange(1,26).reshape(5,5)
mat
```

```
mat[2:,1:]
```

```
z=mat[3:4,4:5]
z
```

```
z=mat[0:3,1:2]
z
```

```
z=mat[4:,0:]
z
```

```
z=mat[3:,0:5]
z
```

```
#sum
z=np.sum(mat)
z
```

```
#sd
z=np.std(mat)
z
```

```
z=np.sum(mat, axis=0)
z
```

outputs:

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```
[ ] z=np.arange(0.01,1 +0.01, 0.01).reshape(10, 10)
z

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. ]])

[ ] z=np.linspace(0, 1, 20)
z

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. ])

[ ] mat = np.arange(1,26).reshape(5,5)
mat

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]])
```

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

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]])

[ ] mat[2:,1:]

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

[ ] z=mat[3:4,4:5]
z

array([[20]])

[ ] z=mat[0:3,1:2]
z

array([[ 2],
       [ 7],
       [12]])

[ ] z=mat[4:,0:]
z

array([[21, 22, 23, 24, 25]])
```

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array([[21, 22, 23, 24, 25]])

```
[ ] z=mat[3:,0:5]
z
array([[16, 17, 18, 19, 20],
       [21, 22, 23, 24, 25]])
```

```
[ ] #sum
z=np.sum(mat)
z
325
```

```
[ ] #sd
z=np.std(mat)
z
7.211102550927978
```

```
z=np.sum(mat, axis=0)
z
array([55, 60, 65, 70, 75])
```

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