Scalars (0D tensors)

```python
import numpy as np
import matplotlib.pyplot as plt
x = np.array(7)
x
```

```
array(7)
```

```python
print("Dimension of 0D Tensor x is: ", x.ndim)
```

```
Dimension of 0D Tensor x is:  0
```

Vectors (1D tensors)

```python
x = np.array([7, 4, 16, 28, 14])
x
```

```
array([ 7,  4, 16, 28, 14])
```

```python
print("Dimension of 1D Tensor x is: ", x.ndim)
```

```
Dimension of 1D Tensor x is:  1
```

Matrices (2D tensors)

```python
x = np.array([[5, 8, 24, 34, 50],
[6, 7, 13, 35, 1],
[17, 80, 44, 6, 21]])
x
```

```
array([[ 5,  8, 24, 34, 50],
       [ 6,  7, 13, 35,  1],
       [17, 80, 44,  6, 21]])
```

```python
print("Dimension of 2D Tensor x is: ", x.ndim)
```

```
Dimension of 2D Tensor x is:  2
```

3D tensors and higher-dimensional tensors

```python
from numpy import array
```

```
T = array([
  [
  [1,2,3],    [4,5,6],    [7,8,9]],
  [[11,12,13], [14,15,16], [17,18,19]],
  [[21,22,23], [24,25,26], [27,28,29]
  ],
  ])
print(T.shape)
print("3D Tensor T is: ", T)
```

```
(3, 3, 3)
3D Tensor T is:  [[[ 1  2  3]
  [ 4  5  6]
  [ 7  8  9]]

 [[11 12 13]
  [14 15 16]
  [17 18 19]]

 [[21 22 23]
  [24 25 26]
  [27 28 29]]]
```

```
print("Dimension of 3D Tensor T is: ", T.ndim)
```

```
Dimension of 3D Tensor T is:  3
```

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