

```
[1]: import numpy as np
array = np.random.randint(50, 101, size=(5, 10))
print(array)
```

```
[[63 71 60 89 85 80 51 95 94 78]
 [58 61 69 60 69 78 67 80 59 60]
 [98 62 52 63 96 68 95 94 79 63]
 [94 71 66 72 61 64 96 56 66 71]
 [56 69 80 84 68 61 52 95 51 76]]
```

```
[6]: import numpy as np
a = np.array([[1, 2],[3, 4]])
b = np.array([[2, 2],[2, 2]])
result = a.dot(b)
print(result)
```

```
[[ 6  6]
 [14 14]]
```

```
[7]: import numpy as np
powersof2 = np.array([2**i for i in range(10)])
print(powersof2)
```

```
[ 1  2  4  8 16 32 64 128 256 512]
```

```
[8]: import numpy as np
array = np.array([[ 0, 1, 2, 3],[ 4, 5, 6, 7],[ 8, 9, 10, 11]])
diagonals = np.diagonal(array)
print(diagonals)
```

```
[ 0  5 10]
```

```
[10]: import numpy as np
diagonal_elements = [1, 2, 3, 4]
array = np.diag(diagonal_elements)
print(array)
```

```
[[1 0 0 0]
 [0 2 0 0]
 [0 0 3 0]
 [0 0 0 4]]
```

```
[11]: import numpy as np
array = np.array([[ 1, 2, 3], [ 4, 5, 6], [ 0, 8, 9], [ 0, 0, 12]])
print(array)
```

```
[[ 1  2  3]
 [ 4  5  6]
 [ 0  8  9]
 [ 0  0 12]]
```