```
a = [ [1, 2, 3],
      [4, 5, 6],
      [7, 8, 9],
      [10, 11, 12] ]
```

len(a) = number of rows = 4

len(a[0]) = number of columns = 3

Transpose

a transpose (rows → cols and cols → rows)

```
= [ [ 1, 4, 7, 10]
    [ 2, 5, 8, 11]
    [ 3, 6, 9, 12] ]
```

```
[ [1, 2, 3, 4]
  [5, 6, 7, 8]
  [9, 10, 11, 12] ]
```

```
[ [1, 2, 3, 4]
  [5, 6, 7, 8]
  [9, 10, 11, 12] ]
```

```
[ [1, 2, 3, 4]
  [5, 6, 7, 8]
  [9, 10, 11, 12] ]
```

```
array([[ 0,  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, 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, 51, 52, 53, 54, 55],
       [56, 57, 58, 59, 60, 61, 62, 63]])
```

→ test [3 : 7 : 2 , 1 : 6 : 3]

[3, 5] [1, 4]