

# MATLAB Colon



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- **The Colon Operator**

The colon " : " is one of MATLAB's most important operators. It occurs in several different forms. The expression

```
>>1:10
```

is a row vector containing the integers from 1 to 10

```
1 2 3 4 5 6 7 8 9 10
```

To obtain nonunit spacing, specify an increment. For example,

```
>>100:-7:50
```

is

```
100 93 86 79 72 65 58 51
```

- **End as a subscript**

To access the last element of a matrix along a given dimension, use end as a subscript. This allows you to go to the final element without knowing in advance how big the matrix is. For example:

```
>> q = 4:10
```

```
q =
```

```
4 5 6 7 8 9 10
```

```
>> q(end)
```

```
ans = 10
```

```
>> q(end-4:end)
```

```
ans =
```

```
6 7 8 9 10
```

```
>> q(end-2:end)
```

```
ans = 8 9 10
```

This technique works for two-dimensional matrices as well:

```
>> q = [1 2 3;4 5 6;7 8 9]
```

```
q =
```

```
1 2 3
```

```
4 5 6
```

```
7 8 9
```

```
>> q(end,end)
```

```
ans =
```

```
9
```

```
>> q(2,end-1:end)
```

```
ans =
```

```
5 6
```

```
>> q(end-2:end,end-1:end)
```

```
ans =
```

```
2 3
```

```
5 6
```

```
8 9
```

```
>> q(end-1,:)
```

```
ans =
```

```
4 5 6
```

```
7 8 9
```