



# Rounding Decimals

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## Rounding Decimals

There are primarily five ways of rounding off decimals in NumPy:

- truncation
- fix
- rounding
- floor
- ceil

## Truncation

Remove the decimals, and return the float number closest to zero. Use the `trunc()` and `fix()` functions.

## Example

Truncate elements of following array:

```
import numpy as np

arr = np.trunc([-3.1666, 3.6667])

print(arr)
```

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## Example

Same example, using `fix()` :

```
import numpy as np

arr = np.fix([-3.1666, 3.6667])

print(arr)
```

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## Rounding

The `round()` function increments preceding digit or decimal by 1 if  $\geq 5$  else do nothing.

E.g. round off to 1 decimal point, 3.16666 is 3.2

## Example

Round off 3.1666 to 2 decimal places:

```
import numpy as np

arr = np.around(3.1666, 2)

print(arr)
```

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# Floor

The `floor()` function rounds off decimal to nearest lower integer.

E.g. floor of 3.166 is 3.

## Example

Floor the elements of following array:

```
import numpy as np

arr = np.floor([-3.1666, 3.6667])

print(arr)
```

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# Ceil

The `ceil()` function rounds off decimal to nearest upper integer.

E.g. ceil of 3.166 is 4.

## Example

Ceil the elements of following array:

```
import numpy as np

arr = np.ceil([-3.1666, 3.6667])

print(arr)
```

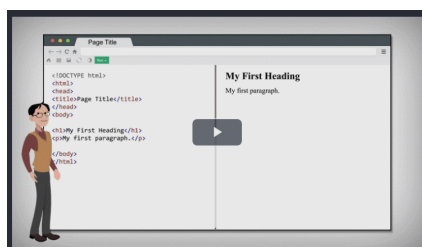
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