



# Python Numbers

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## Python Numbers

There are three numeric types in Python:

- `int`
- `float`
- `complex`

Variables of numeric types are created when you assign a value to them:

### Example

```
x = 1      # int
y = 2.8    # float
z = 1j     # complex
```

To verify the type of any object in Python, use the `type()` function:

### Example

```
print(type(x))
print(type(y))
print(type(z))
```

# Int

Int, or integer, is a whole number, positive or negative, without decimals, of unlimited length.

## Example

Integers:

```
x = 1
y = 35656222554887711
z = -3255522

print(type(x))
print(type(y))
print(type(z))
```

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# Float

Float, or "floating point number" is a number, positive or negative, containing one or more decimals.

## Example

Floats:

```
x = 1.10
y = 1.0
z = -35.59

print(type(x))
```

```
print(type(y))  
print(type(z))
```

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Float can also be scientific numbers with an "e" to indicate the power of 10.

## Example

Floats:

```
x = 35e3  
y = 12E4  
z = -87.7e100  
  
print(type(x))  
print(type(y))  
print(type(z))
```

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## Complex

Complex numbers are written with a "j" as the imaginary part:

## Example

Complex:

```
x = 3+5j
y = 5j
z = -5j

print(type(x))
print(type(y))
print(type(z))
```

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## Type Conversion

You can convert from one type to another with the `int()`, `float()`, and `complex()` methods:

## Example

Convert from one type to another:

```
x = 1      # int
y = 2.8    # float
z = 1j     # complex

#convert from int to float:
a = float(x)

#convert from float to int:
b = int(y)

#convert from int to complex:
c = complex(x)

print(a)
print(b)
print(c)
```

```
print(type(a))  
print(type(b))  
print(type(c))
```

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**Note:** You cannot convert complex numbers into another number type.

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## Random Number

Python does not have a `random()` function to make a random number, but Python has a built-in module called `random` that can be used to make random numbers:

### Example

Import the random module, and display a random number between 1 and 9:

```
import random  
  
print(random.randrange(1, 10))
```

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In our [Random Module Reference](#) you will learn more about the Random module.

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## Test Yourself With Exercises

### Exercise:

Insert the correct syntax to convert x into a floating point number.

$$x = 5$$

$$x = \quad (x)$$

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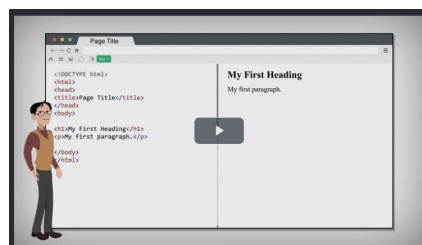
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