

# Python Operators

## Python Operators

Operators are used to perform operations on variables and values.

Python divides the operators in the following groups:

- Arithmetic operators
- Assignment operators
- Comparison operators
- Logical operators
- Identity operators
- Membership operators

## Python Arithmetic Operators


Arithmetic operators are used with numeric values to perform common mathematical operations:

Operator	Name	Example
+	Addition	$x + y$
-	Subtraction	$x - y$
*	Multiplication	$x * y$

/	Division	x / y
%	Modulus	x % y
**	Exponentiation	x ** y
//	Floor division	x // y

## Python Assignment Operators

Assignment operators are used to assign values to variables:

Operator	Example	Same As	Try it
=	x = 5	x = 5	
+=	x += 3	x = x + 3	
-=	x -= 3	x = x - 3	
*=	x *= 3	x = x * 3	

`/=`

`x /= 3`

`x = x / 3`

`%=`

`x %= 3`

`x = x % 3`

`//=`

`x //= 3`

`x = x // 3`

`**=`

`x **= 3`

`x = x ** 3`

`&=`

`x &= 3`

`x = x & 3`

`|=`

`x |= 3`

`x = x | 3`

`^=`

`x ^= 3`

`x = x ^ 3`

`>>=`

`x >>= 3`

`x = x >> 3`

`<<=`

`x <<= 3`

`x = x << 3`

# Python Comparison Operators

Comparison operators are used to compare two values:

Operator	Name	Example	Try it
==	Equal	x == y	
!=	Not equal	x != y	
>	Greater than	x > y	
<	Less than	x < y	
>=	Greater than or equal to	x >= y	
<=	Less than or equal to	x <= y	

# Python Logical Operators

Logical operators are used to combine conditional statements:

Operator	Description	Example	Try it
and	Returns True if both statements are true	x < 5 and x < 10	
or	Returns True if one of the statements is true	x < 5 or x < 4	
not	Reverse the result, returns False if the result is true	not(x < 5 and x < 10)	

# Python Identity Operators

Identity operators are used to compare the objects, not if they are equal, but if they are actually the same object, with the same memory location:

Operator	Description	Example	Try it
is	Returns true if both variables are the same object	x is y	

is not	Returns true if both variables are not the same object	x is not y
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## Python Membership Operators

Membership operators are used to test if a sequence is presented in an object:

Operator	Description	Example	Try it
in	Returns True if a sequence with the specified value is present in the object	x in y	
not in	Returns True if a sequence with the specified value is not present in the object	x not in y	