

OPERATORS IN PYTHON

What are Operators?

☞ Operator is a symbol used to perform operations between two variables or values.

Example:

```
a = 10
b = 5
c = a + b
```

Here + is an operator.

🔢 1. ARITHMETIC OPERATORS

These operators are used for mathematical calculations.

Operator	Name	Example
+	Addition	a + b
-	Subtraction	a - b
*	Multiplication	a * b
/	Quotient (Division)	a / b
%	Remainder (Modulus)	a % b

✔ Addition (+)

Adds two numbers.

```
a = 10
b = 20
print(a + b)
```

Output: 30

✔ Subtraction (-)

Subtracts one number from another.

```
a = 20
b = 5
print(a - b)
```

Output: 15

✓ Multiplication (*)

Multiplies two numbers.

```
a = 4
b = 5
print(a * b)
```

Output: 20

✓ Quotient (/)

Divides one number by another.

```
a = 10
b = 2
print(a / b)
```

Output: 5.0

✓ Remainder (%)

Gives remainder after division.

```
a = 10
b = 3
print(a % b)
```

Output: 1

📌 Note:

☞ % is very important for even / odd questions.

```
a = 10
b = 5
print("Addition:", a + b) # a +
b print("Subtraction:", a - b) # a - b
print("Multiplication:", a * b)
print("Division:", a / b) # a * b # a / b
print("Floor Division:", a // b) # a // b (integer division)
print("Modulus:", a % b) # a % b
print("Exponentiation:", a ** b) # a raised to the power of
```

Example:-

```
rollno = 1
name = "Aman"
```

```
m1 = 70
m2 = 65
m3 = 80
m4 = 75
m5 = 60
```

```
# Calculate total and percentage
total = m1 + m2 + m3 + m4 + m5
percentage = total / 5
```

```
# Display result
print("Roll No:", rollno)
print("Name:", name)
print("Total Marks:", total)
print("Percentage:", percentage)
```

🔗 2. ASSIGNMENT OPERATORS

Used to assign values to variables.

Operator Example

```
=      a = 10
```

Example:

```
a = 10
print(a)
```

Output: 10

3. RELATIONAL (COMPARISON) OPERATORS

Used to compare two values.

Operator	Meaning
==	Equal to
!=	Not equal
>	Greater than
<	Less than
>=	Greater than or equal
<=	Less than or equal

Example:

```
a = 10
b = 5
print(a > b)
```

Output: True

```
a = 10
```

```
b = 5
```

```
print("a == b:", a == b)
```

```
print("a != b:", a != b)
```

```
print("a < b:", a < b)
```

```
print("a > b:", a > b)
```

```
print("a <= b:", a <= b)
```

```
print("a >= b:", a >= b)
```

🔒 4. LOGICAL OPERATORS

Used to check conditions.

Operator	Meaning
and	Both conditions true
or	Any one condition true
not	Opposite result

Example:

```
a = 10  
b = 5  
print(a > 5 and b < 10)
```

Output: True

```
a = 10
```

```
b = 5
```

```
c = 20 # Combining comparisons with logical operators
```

```
print("a > b and a < c:", a > b and a < c) # True
```

```
print("a == b or b < c:", a == b or b < c) # True
```

```
print("not (a < b):", not (a < b)) # True
```

Example:- a = 10

```
b = 5
```

```
c = 12
```

```
# Combining comparisons with logical operators
```

```
print("a > b and a < c:", a > b and a < c or a > c) # True
```