**Basic Operators ‘Math’**

In This Page I Understand **operators** in JavaScript, which are symbols used for calculations, comparisons, and logic.

**1. Arithmetic Operators**

Used for math operations:

javascript

CopyEdit

let x = 10, y = 5;

console.log(x + y); // 15 (Addition)

console.log(x - y); // 5 (Subtraction)

console.log(x \* y); // 50 (Multiplication)

console.log(x / y); // 2 (Division)

console.log(x % y); // 0 (Remainder)

console.log(x \*\* y); // 100000 (Exponentiation, 10^5)

**2. Assignment Operators**

Assign values to variables:

javascript

CopyEdit

let a = 5;

a += 2; // Same as a = a + 2

console.log(a); // 7

**3. Comparison Operators**

Compare values and return **true** or **false**:

javascript

CopyEdit

console.log(5 > 3); // true (greater than)

console.log(5 < 3); // false (less than)

console.log(5 >= 5); // true (greater than or equal to)

console.log(5 == "5"); // true (loose equality, only compares value)

console.log(5 === "5"); // false (strict equality, checks type too)

console.log(5 != "5"); // false (not equal)

console.log(5 !== "5"); // true (strict not equal)

**Use === (strict equality) instead of == to avoid type conversion issues.**

**4. Logical Operators**

Used for conditions:

javascript

CopyEdit

console.log(true && false); // false (AND - both must be true)

console.log(true || false); // true (OR - at least one must be true)

console.log(!true); // false (NOT - reverses value)

**5. String Concatenation (+)**

* When used with strings, + joins them:

javascript

CopyEdit

console.log("Hello " + "World"); // "Hello World"

* If a number is added to a string, it converts the number to a string:

javascript

CopyEdit

console.log("5" + 3); // "53"

**6. Increment & Decrement Operators**

Increase or decrease a number by 1:

javascript

CopyEdit

let count = 10;

count++; // Increments by 1

console.log(count); // 11

count--; // Decrements by 1

console.log(count); // 10

**7. Ternary Operator (? :)**

A short way to write if...else:

javascript

CopyEdit

let age = 18;

let status = age >= 18 ? "Adult" : "Minor";

console.log(status); // "Adult"

**Key Insights**

* Use === for strict comparisons to avoid unexpected results.
* + joins strings, but -, \*, and / treat values as numbers.
* Logical operators (&&, ||, !) are used for conditions.
* Ternary operator (? :) is a short way to write conditional statements.