* Operators in c++

1. Arithmetic Operators

| **Operator** | **Meaning** | **Example** |
| --- | --- | --- |
| + | Addition | a + b |
| - | Subtraction | a - b |
| \* | Multiplication | a \* b |
| / | Division | a / b |
| % | Modulus (remainder) | a % b |

Example:

int a = 10, b = 3;

cout << a + b; // Output: 13

1. Relational Operators

| **Operator** | **Meaning** | **Example** |
| --- | --- | --- |
| == | Equal to | a == b |
| != | Not equal to | a != b |
| > | Greater than | a > b |
| < | Less than | a < b |
| >= | Greater than or equal | a >= b |
| <= | Less than or equal | a <= b |

Example:

int a = 10, b = 5;

cout << (a > b); // Output: 1 (true)

1. Logical Operators

| **Operator** | **Meaning** | **Example** |
| --- | --- | --- |
| && | Logical AND | a > b && b < c |
| ` |  | ` |
| ! | Logical NOT | ! (a == b) |
| Example:  int a = 5, b = 10;  cout << (a < b && b == 10); // Output: 1 (true) |  |  |

1. **Assignment Operators.**

| **Operator** | **Meaning** | **Example** |
| --- | --- | --- |
| = | Assign | a = 10 |
| += | Add and assign | a += 5 |
| -= | Subtract and assign | a -= 3 |
| \*= | Multiply and assign | a \*= 2 |
| /= | Divide and assign | a /= 2 |
| %= | Modulus and assign | a %= 3 |

Example.

int a = 5;

a += 3; // Now a is 8

1. **Increment and Decrement Operators**

| **Operator** | **Meaning** | **Example** |
| --- | --- | --- |
| ++ | Increment | a++ or ++a |
| -- | Decrement | a-- or --a |

Example.

int a = 5;

a++; // Now a is 6

1. **Bitwise Operators**

| **Operator** | **Meaning** | **Example** |
| --- | --- | --- |
| & | AND | a & b |
| ` | ` | OR |
| ^ | XOR | a ^ b |
| ~ | NOT (1's complement) | ~a |
| << | Left shift | a << 2 |
| >> | Right shift | a >> 2 |

Example.

int a = 5, b = 3;

cout << (a & b); // Output: 1

1. Ternary Operator

| **Operator** | **Syntax** |
| --- | --- |
| ? : | condition? val1 : val2 |
| Example  int a = 10, b = 20;  int max = (a > b)? a : b;  cout << max; // Output: |  |

1. Type Casting Operator Used to convert one data type to another.

Example:

float f = 5.5;

int a = (int)f; // Explicit casting