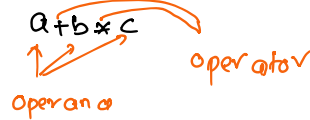


Expression' in C programming

↳ combination of operator & operand (value) that evaluate to some value



Example -

```
int a = 5;
int b = 10;
int c = 2;
int result;
```

```
result = a + b * c; // 5 + 10 * 2 5 25
printf("In result: ", result);
```

Precedence

associativity

1. Arithmetic $a + b * c$

2. Relational $a > b$ $a < c$ $a == b$

3. Logical $a > b \ \&\& \ a > c$ $a > b \ || \ a > c$

4. Assignment $a = 10$ $a += 10$ ($a = a + b$)

5. Bitwise $a \& b$ $a | b$

6. Increment/Dec. $a++$ $++b$ $c--$

7. Conditional. $a > b ? _ : _$

8. Common $a = 1, b = 2, c = 3$

Operator Precedence & Associativity

1. $() [] \rightarrow$ LEFT TO RIGHT
2. $++ -- ! \sim \text{sizeof} *$ RIGHT TO LEFT
3. $* / \%$ LEFT TO RIGHT
4. $+ -$ LEFT TO RIGHT
5. $<< >>$ LEFT TO RIGHT
6. $< <= > >=$ LEFT TO RIGHT
7. $== !=$ LEFT TO RIGHT
8. $\&$ (bitwise AND) LEFT TO RIGHT
9. $\wedge$ (bitwise XOR) LEFT TO RIGHT
10. $\&\&$ (logical AND) LEFT TO RIGHT
11. $\|\|$ (logical OR) LEFT TO RIGHT
12. $|$ (bitwise OR) LEFT TO RIGHT
13. $?:$ (Ternary op.) RIGHT TO LEFT
14. $,$ (comma) LEFT TO RIGHT

$$\text{result} = (a+b > c \&\& d != 0) ? ++x : --y;$$

$$\text{result} = \underbrace{(a+b)}_{\textcircled{1}} + \underbrace{(c+d)}_{\textcircled{2}} + \underbrace{(e+f)}_{\textcircled{3}}$$

$$\text{result} = \underbrace{a++}_{\textcircled{4}} + \underbrace{b++}_{\textcircled{3}} + \underbrace{c++}_{\textcircled{2}} + \underbrace{d--}_{\textcircled{1}}$$

$$\text{result} = \underbrace{a * b}_{\textcircled{1}} \times \underbrace{c / d}_{\textcircled{2}} \cdot \underbrace{e}_{\textcircled{4}}$$

$$\text{result} = \underbrace{a+b}_{\textcircled{1}} - \underbrace{c+d}_{\textcircled{2}} - \underbrace{e}_{\textcircled{4}}$$

$$\text{result} = \underbrace{a >> 2}_{\textcircled{1}} + \underbrace{b < 3}_{\textcircled{2}}$$

$$\text{result} = \underbrace{a > 2}_{\textcircled{1}} + \underbrace{b < 3}_{\textcircled{2}} + \underbrace{c > 5}_{\textcircled{3}}$$

$$\text{result} = \underbrace{a == b}_{\textcircled{1}} + \underbrace{c == d}_{\textcircled{2}} ! = \underbrace{5}_{\textcircled{3}}$$

DAY #103

Sunday, June 7, 2026 9:02 PM

Assume $a=5, b=3, c=6, d=2, x=10, y=20$

result = $(a + b > c \ \&\& \ d \neq 0) ? ++x : --y;$

$5+3$

$(8 > 6 \ \&\& \ 2 \neq 0) ? ++x : --y;$

$8 > 6$

$(1 \ \&\& \ 1 \neq 0) ? ++x : --y;$

$2 \neq 0$

$(1 \ \&\& \ 1) ? ++x : --y$

$1 ? ++x : --y$
19

$1 ? ++x : 19$

$1 ? 11 : 19$

11

TRUTH TABLE OF $\&\&$ (logical AND)

a	b	result (a && b)
0	1	0
0	0	0
1	1	1
1	0	0

Syntax of TERNARY OPERATOR-

condition ? TRUE : FALSE

$5 > 6 ? \text{printf("Hello.")} : \text{printf("Bye")}$

$6 > 5$

1

DAY # 10.4

Sunday, June 7, 2026 9:15 PM

```
#include <stdio.h>
```

```
int main( )
```

```
{  
    int a=10;  
    int b=20;  
    int c=30;  
    int result;
```

```
result = a++ + --b + c++ + c-- + b++ + --a;
```

$$\begin{array}{r} 11 + 19 + 30 + 29 + 21 + 9 \quad \leftarrow \\ \hline 30 \quad 59 \quad 30 \\ \hline 120 \\ \hline 119 \end{array}$$

```
printf("In result: %.d", result);
```

```
return 0;
```

```
}
```

11 9
30