C_21 → Operator Precedence and Associativity

operator Precedence [Each row operators are same precedency]	Associativity	Priority
( ) . → (++ Postfix --)	L → R	1
(++ Prefix --) + - ! ~ * & sizeof (type)	R → L	2
* / %.	L → R	3
+ -	L → R	4
<< >>	L → R	5
< <= > >=	L → R	6
== !=	L → R	7
&	L → R	8
^	L → R	9
|	L → R	10
&&	L → R	11
||	L → R	12
? :	R → L	13
= += -= /= %= *= ^= >>= <<=	R → L	14
,	L → R	15

Ex ①

$a = 2 + 3 * 4$

$\underset{\vee}{}$

$2 + 12 \Rightarrow 14$

$3 * 4 \Rightarrow 12/2 \Rightarrow 6 * 12 \Rightarrow T2$

$2 + T2 \Rightarrow 74$

Ex ② $a = 2 + 3 \boxed{* 4 / 2 * 12} \Rightarrow$ (14)

↓
same precedence.
so use (associativity)

Ex ③

$a = 3 * 4 \% 5 / 2$

$\Rightarrow 12 \% 5 / 2$

$\Rightarrow 12 / 2 \Rightarrow$ ①

Ex ⑤

$a = 3 * 4 + 5 * 6$.

$\Rightarrow 12 + 30$

$\Rightarrow$ ㊷

Ex ④

$a = 3 * (4 \% 5) / 2$

$= 3 * 4 / 2$

$= \dfrac{12}{2} \Rightarrow$ ⑥

Ex ⑥

$a = 3 * (4 + 5) * 6$.

$\Rightarrow 3 * 9 * 6$.

$\Rightarrow 162$

$\dfrac{274}{162}$

Ex ⑦ $a = 0, b = 1, c = -1, d;$

$d = --a * (5 + b) / 2 - c++$

$\Rightarrow -1 * (5 + 1) / 2 - (-1)$

$\Rightarrow -1 * 6 / 2 + 1$

$\Rightarrow -6 / 2 + 1 \Rightarrow -3 + 1 \Rightarrow -2$

a	b	c	d
0̸	1	-1̸	0̸
-1		0	-2

print a, b, c, d

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

int main()
{
    int a;
    a=2+3*4;
    printf("%d",a);
}
```

```
14
Process returned 0 (0x0)    execution time : 0.026 s
Press any key to continue.
```

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

int main()
{
    int a;
    a=2+3*4/2*12;
    //3*4=12
    //12/2=6
    //6*12=72
    //2+72=74
    printf("%d",a);
}
```

```
74
Process returned 0 (0x0)    execution time : 0.031 s
Press any key to continue.
```

```c
1    #include <stdio.h>
2    #include <stdlib.h>
3
4    int main()
5    {
6        int a;
7        a=3*4%5/2;
8        //same precedence so left to right
9        //3*4=12
10       //12%5=2
11       // 2/2=1
12       printf("%d",a);
13   }
14
```

```
1
Process returned 0 (0x0)    execution time : 0.047 s
Press any key to continue.
```

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

int main()
{
    int a;
    a=3*(4%5)/2;
    // () have higher priority
    //(4%5)=4
    //3*4/2 same precedence so left to right
    //3*4=12
    //12/2=6
    printf("%d",a);
}
```

```
6
Process returned 0 (0x0)   execution time : 0.047 s
Press any key to continue.
```

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

int main()
{
    int a;
    a=3*4+5*6;
    //3*4=12
    //5*6=30
    //12+30=42
    printf("%d",a);
}
```

```
42
Process returned 0 (0x0)    execution time : 0.031 s
Press any key to continue.
```

```c
1    #include <stdio.h>
2    #include <stdlib.h>
3
4    int main()
5    {
6        int a;
7        a=3*(4+5)*6;
8        //(4+5)=9
9        //3*9*6
10       //27*6
11       //
12       printf("%d",a);
13   }
14
```

```
162
Process returned 0 (0x0)    execution time : 0.042 s
Press any key to continue.
```

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

int main()
{
    int a=0,b=1,c=-1,d;
    d=--a*(5+b)/2-c++;
    // --a * (5+b) / 2 - c++
    // --a * (5+1) / 2 - c++
    // --a * 6 / 2 - -1
    // --a * 6 / 2 + 1
    // -1 * 6 / 2 + 1
    // -6 / 2 + 1
    // -3 + 1
    //-2 value of d
    printf("%d\n",d);
    printf("%d\n",c);
    printf("%d\n",b);
    printf("%d\n",a);
}
```

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```
-2
0
1
-1

Process returned 0 (0x0)    execution time : 0.048 s
Press any key to continue.
```