

AIRTHMATIC OPERATOR

$+, -, *, /, \% (\text{mod})$

$$3 + 2 = 5,$$

$$3 - 2 = 1,$$

$$3 * 2 = 6$$

$$\checkmark 5 / 2 = 2$$

$$\checkmark 5 \% 2 = 1 \text{ REMAINDER}$$

$\text{int} / \text{int} = \text{int}$

$$5 / 2 = 2$$

$$\begin{array}{r} 2 \overline{) 5} \\ \underline{-4} \\ 1 \end{array}$$

$/$

$\% (\text{mod}) // \text{remainder}$

$$5 / 2 = 2$$

$$5 \% 2 = 1$$

$$-5 / 2 = -2$$

$$-5 \% 2 = -1$$

$$5 / -2 = -2$$

$$5 \% -2 = 1$$

$$-5 / -2 = 2$$

$$-5 \% -2 = -1$$

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REMAINDER

$$a \% b = a - (a / b) * b$$

e.g.

$$\begin{aligned} -5 \% 2 &= -5 - (-5/2) * 2 \\ &= -5 - (-2) * 2 \\ &= -5 + 4 \\ &= -1 \end{aligned}$$

E.G. $-5 \% -2 = 1$

1. $*, / , \% :-$ same [left --> right]

2. $+, - :-$ same [left --> right]

1. `int x ;`

`x = 4 * 3 % 5`

`x = 12 % 5`

`x = 2`

2. `int x , y ;`

`x = 3 % 5`

`y = 3 / 5`

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3. int x ;

$x = 4 \% 5 + 6 \% 5 ;$

$x = 4 + 6 \% 5 ;$

$x = 4 + 1$

$x = 5$

4. int x ;

$x = -3 * -4 \% -6 / -5 ;$

$x = 12 \% -6 / -5$

$x = 0 / -5$

$x = 0$

$x = 0$

5. int x ;

$x = -3 + 4 - 7 * 8 / 5 \% 10 ;$

$x = -3 + 4 - 56 / 5 \% 10 ;$

$x = -3 + 4 - 11 \% 10 ;$

$x = -3 + 4 - 1$

$x = 1 - 1$

$x = 0$

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6. `int x ;`

`x = 3 ** 4 - 7 * 8 ;`

error :- `** , ^` X

fortran , python --> power `**`

basic --> power `^`

7. `int x;`

`x = 2 * 3 / 4 + 4 / 4 + 8 - 2 + 5 / 8`

`x = 6 / 4 + 4 / 4 + 8 - 2 + 5 / 8`

`x = 1 + 4 / 4 + 8 - 2 + 5 / 8`

`x = 1 + 1 + 8 - 2 + 5 / 8`

`x = 1 + 1 + 8 - 2 + 0`

`x = 8`

8. `int x , d = 3 , q = 2 ;`

`x = q * d / 4 - 12 / 12 + 12 / 3 * 16 / d ;`

`x = 2 * 3 / 4 - 12 / 12 + 12 / 3 * 16 / 3 ;`

`x = 6 / 4 - 12 / 12 + 12 / 3 * 16 / 3 ;`

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$$x = 1 - 12 / 12 + 12 / 3 * 16 / 3 ;$$

$$x = 1 - 1 + 12 / 3 * 16 / 3 ;$$

$$x = 1 - 1 + 4 * 16 / 3 ;$$

$$x = 1 - 1 + 64 / 3$$

$$x = 1 - 1 + 21$$

$$x = 21$$

9. **int i = 3 , a = 4 , n ;**

float t = 4.2 ;

$$n = a * a / i + i / 2 + 2 + t ;$$

$$n = 4 * 4 / 3 + 3 / 2 + 2 + 4.2 ;$$

$$n = 16 / 3 + 3 / 2 + 2 + 4.2 ;$$

$$n = 5 + 3 / 2 + 2 + 4.2 ;$$

$$n = 5 + 1 + 2 + 4.2 ;$$

$$n = 6 + 2 + 4.2$$

$$n = 8 + 4.2 ;$$

$$n = 12.2$$

$$n = 12 (\text{int})$$

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10. **float a = 1.5 , c ;**

int b = 3 ;

c = b / 2 + b * 8 / b - b + a / 3 ;

c = 3 / 2 + 3 * 8 / 3 - 3 + 1.5 / 3 ;

c = 1 + 3 * 8 / 3 - 3 + 1.5 / 3

c = 1 + 24 / 3 - 3 + 1.5 / 3

c = 1 + 8 - 3 + 1.5 / 3

c = 1 + 8 - 3 + 0.5

c = 9 - 3 + 0.5

c = 6 + 0.5

c = 6.5

11 . **int i = 2, j = 3 ,k ,l;**

float a,b;

k = i / j *j ;

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$k = 2 / 3 * 3$

$k = 0 * 3$

$k = 0$

**$l = j / i * i ;$
 $l = 2$**

**$a = i / j * j ;$
 $a = 0$
 $a = 0.000000$**

$b = j / i * i ;$

**$b = 3 / 2 * 2 ;$
 $b = 1 * 2 ;$
 $b = 2$
 $b = 2.000000$**

**12. float a = 5 , b = 2 ;
int c ;
c = a % b ;
error :- float --> % X**