

Infix, Prefix & Postfix

Notations to write an Expression

1. Infix - ① $a + b$ ③ p/q
 ② $a - b$ ④ $x - y$
 Operand <operator> operand

✓ $5 + 5$
 ✓ $5, 5 +$
 ✓ $+ 5, 5$

Infix Prefix Postfix
 $a * b$ $* ab$ $ab *$
 $a - b$ $- ab$ $ab -$

2. Prefix → $<operator> <opnd_1> <opnd_2>$
 $+ ab$ $- pq$
 $- xy$ $* pb$

3. Postfix → $<opnd_1> <opnd_2> <operator>$
 $ab +$
 $xy -$
 $pq *$

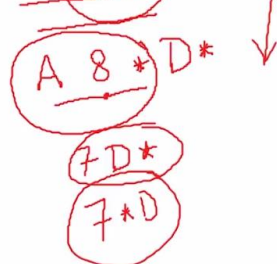
Operator	Associativity	Precedence
()	Left-to-Right	Highest 14
[]	Left-to-Right	
.	Left-to-Right	
->	Left-to-Right	
!	Right-to-Left	13
~	Right-to-Left	
-	Right-to-Left	
++	Right-to-Left	
--	Right-to-Left	
&	Right-to-Left	
* (type)	Right-to-Left	
sizeof	Right-to-Left	
*	Left-to-Right	12
/	Left-to-Right	
%	Left-to-Right	
+	Left-to-Right	11
-	Left-to-Right	
<<	Left-to-Right	10
>>	Left-to-Right	
<	Left-to-Right	8
<=	Left-to-Right	
>	Left-to-Right	
>=	Left-to-Right	
==	Left-to-Right	8
!=	Left-to-Right	
&	Left-to-Right	7
^	Left-to-Right	6
	Left-to-Right	5
&&	Left-to-Right	4
	Left-to-Right	3
? :	Right-to-Left	2
=, +=	Right-to-Left	1
*, etc.	Left-to-Right	
,	Left-to-Right	Lowest 0

Infix, Prefix & Postfix

Left

Infix: $(A * (B + C)) * D$ ✓

Postfix: $ABC + * D *$



operator	precedence ^{Right}
$()$	3
$*/$	2
$+ -$	1

Q1 $x - y * z$ to prefix and postfix?

① Prefix

SL → Parenthesize the expression

$(x - (y * z))$

$(x - [y * z])$

$- x * y z$ Done 😊

② Postfix

SL → Parenthesize the expⁿ

$(x - (y * z))$

$(x - [y * z])$

$x y z * -$

③ $p - q - r / a$ ✓

① Prefix $((p - q) - (r / a))$

$([-pq] - [ra])$
 $--pq/ra = \text{Prefix!}$

Quick Quiz: Convert this ③ to Postfix

Q $(m-n) * (p+q)$ to postfix?

\Rightarrow
S1 $\rightarrow (m-n) * (p+q)$
 $([mn] * [pq])$

$[mn][pq]*$

$mn-pq+*$

\rightarrow Postfix
equivalent
of this expression

Quick Quiz: Convert the same
expression to prefix!