Mo Tu We Th Fr Sa Su Date / /

☆ Infix to Postfix

1) A - B + C

→

Symbol	Stack	Expression P
A		A
-	-	A
B	-	AB
+	+	AB-
C	+	AB-C
		AB-C+

b) A * B + C / D

→

Symbol	Stack	Expression P
A		A
*	*	A
B	*	AB
+	+	AB*
C	+	AB* C
/	+/	AB*C
D	+/	AB*CD/
		AB* CD/+

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c) (A-B) + C* D / E -C

Symbol	Stack	Expression of P
C	C	
A	C	A
-	C-	A
B	C-	AB
)		AB-
+	+	AB-
C	+	AB-C
*	+*	AB-C
D	+*	AB-CD
/	+/	AB-CD*
E	+/	AB-CD*E
-	-	AB-CD*E/+
C	-	AB-CD*E/+C
		AB-CD*E/+C-

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d) (A * B) + (C/D) - (D+E)

C	C	
A	C	A
*	C*	A
B	C*	AB
)		AB*
+	+	AB*
C	+C	AB*
C	+C	AB* C
/	+C/	AB*C
D	+C/	AB*CD
)	+	AB *CD/
-	-	AB * CD/+
C	-C	AB * CD/+
D	-C	AB * CD/+D
+	-C+	AB* CD/+D
E	-C+	AB* CD/+DE
)	-	AB* CD/+DE+
		AB * CD/+ DE+-

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e) ((A - B) + D / (CE + F) * G))

(	(	
(	((	
A	((	A
-	((-	A
B	((-	AB
)	(	AB-
+	(+	AB-
D	(+	AB-D
/	(+/	AB-D
(	(+/(	AB-D
(	(+/((	AB-D
E	(+/((	AB-DE
+	(+/((+	AB-DE
F	(+/((+	AB-DEF
)	(+/(	AB-DEF+
*	(+/(*	AB-DEF+
G	(+/(*	AB-DEF+G
)	(+/	AB-DEF+G*
)		~~AB-GD~~
		AB-DEF+G*/+

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f) (A - 2 * (B+C) / D * E) + F

(	(	
A	(	A
-	(-	A
2	(-	A2
*	(-*	A2
(	(-*(	A2
B	(-*(	A2B
+	(-*(+	A2B
C	(-*(+	A2BC
)	(-*	A2BC+
/	(-/	A2BC+*
D	(-/	A2BC+*D
*	(-*	A2BC+*D/
E	(-*	A2BC+*D/E
)		A2BC+*D/E*-
+	+	A2BC+*D/E*-
F		A2BC+*D/E*F
		A2BC+*D/E*F+

9)

14		14
/	/	14
7	/	14 7
*	*	14 7 /
3	*	14 7 / 3
-	* -	14 7 / 3 *
4	-	14 7 / 3 * 4
+	+	14 7 / 3 * 4 -
9	+	14 7 / 3 * 4 - 9
/	+ /	14 7 / 3 * 4 - 9
2	+ /	14 7 / 3 * 4 - 9 2
		14 7 / 3 * 4 - 9 2 / +

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9.a) 14 7 / 3 * 4 - 9 2 / +

Symbol	O1	O2	Value	Stack
14				14
7				14, 7
/	14	7	2	2
3				2, 3
*	2	3	6	6
4				6, 4
-	6	4	2	2
9				2, 9
2				2, 9, 2
/	9	2	4.5	2, 4.5
+	2	4.5	6.5	6.5

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Infix to Prefix

a) A - B + C

→ Reverse : C + B - A

C		C
+	+	C
B	+	CB
-	-	CB+
A	-	CB+A
		CB+A-

Prefix : - A + BC

b) A * B + C / D

→ D / C + B * A

D		D
/	/	D
C	/	DC
+	+	DC /
B	+	DC/B
*	+*	DC/B
A	+*	DC/BA
		DC/BA* +

Prefix : + * AB / CD

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c) (A-B)+C*D/E-C

→ C-E/D*C+(B-A)

C		C
-	-	C
E	-	CE
/	-/	CE
D	-/	CED
*	-*	CED/
C	-*	CED/C
+	+	CED/C*-
(	+(	CED/C*-
B	+(	CED/C*-B
-	+(-	CED/C*-B
A	+(-	CED/C*-BA
)	+	CED/C*-BA-
		CED/C*-BA-+

Prefix: +-AB-*C/DEC

Date / /

4) (a*b)+(c/d)-(d+e)

→ (e+d)-(d/c)+(b*a)

(	(	
e	(	e
+	(+	e
d	(+	ed
)		ed+
-	-	ed+
(	-(	ed+
d	-(	ed+
/	-(/	ed+
c	-(/	ed+dc
)	-	ed+dc/
+	+	ed+dc/-
(	+(	ed+dc/-
b	~~+(*~~ +(	ed+dc/-b
*	+(*	ed+dc/-b
a	+(*	ed+dc/-ba
)	+	ed+dc/-ba*
		ed+dc/-ba*+

~~Pre~~ Prefix: +*ab-/cd+de

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5) ((A-B)+D/((E+F)*g))

-> ((g*(F+E))/D+(B-A))

(	(	
(	((	
g	((	g
*	((*	g
(	((*(	g
F	((*(	gF
+	((*(+	gF
E	((*(+	gFE
)	((*	gFE+
)	(	gFE+*
/	(/	gFE+*
D	(/	gFE+*D
+	(+	gFE+*D/
(	(+(	gFE+*D/
B	(+(	gFE+*D/B
-	(+(-	gFE+*D/B
A	(+(-	gFE+*D/BA
)	(+	gFE+*D/BA-
)		gFE+*D/BA-+

Prefix : +-AB/D*+EFG

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6) F + (E * D / (C + B) * 2 - A)

→ F		F
+	+	F
C	+C	F
E	+C	FE
*	+C*	FE
D	+C*	FED
/	+C/	FED*
C	+C/C	FED*
$\boxed{C}$	+C/C	FED*C
+	+C/C+	FED*C
B	+C/C+	FED*CB
)	+C/	FED*CB+
*	+C*	FED*CB+/
2	+C*	FED*CB+/2
-	+C-	FED*CB+/2*
A	+C-	FED*CB+/2*A
)	+	FED*CB+/2*A-
		FED*CB+/2*A-+

Prefix: +-A*2/+BC*DEF

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7) 2/9 + 4 - 3 * 7 / 14

2		2
/	/	2
9	/	29
+	+	29/
4	+	29/4
-	-	29/4+
3	-	29/4+3
*	-*	29/4+3
7	-*	29/4+37
/	-/	29/4+37*
14	-/	29/4+37*14
		29/4+37*14/-

Prefix : -/14*73+4/92