Infix - Prefix & Postfix

1. A ^ B * C - D + E/ F/ (G + H)

1. A^B * C - D + E/ F/ (G+H)

PREFIX

Expression	Stack	Prefix
A		A
^	^	A
B	^	AB
*	*	^AB
C	*	^ABC
-	-	*^ABC
D	-	*^RBCD
+	+	- *^ABCD
E	+	- *^ABCDE
/	+/	- *^ABCDE
F	*/	-^^ABCDEF
/	+ /	-*^ABCD/EF
(	+/(	-*^ABCD/EFG
+	+/(+	-+^ABCD/ EFG
H	+/(+	- *^ABCD/EF+GH

Prefix = -* ^ABCD/ EF + GH

POSTFIX

Expression	Stack	Postfix
A		A
A^	^	A
B	^	AB
^	^	AB^
C	*	AB^C
*	*	AB^C*
D	-	AB^C*D
+	+	AB^C*D-
E	+	AB^C*D-E
/	+/-	AB^C*D-E
F	+/	AB^C*D-EF
/	+/	AB^C*D-EF/
C+*	+	AB^C*D-EF/
G	+/C	AB^C*D-EF/G
+	+/C+	AB^C*D-EF/G
H	+/C+	AB^C*D-EF/GH
)	+/	AB*C*D-EF/GHH

∴ postfix = AB^C*D-EF/GH+/+

2. ((A+B)*C-(D-E)) ^ (F+G)

2. ((A+B)* C-(D-E)) ^ (F+G)

prefix

Expression	Stack	Prefix
)	(	
(	((	
A	((	A
+	((+	A
B	((+	AB
)	(-	+AB
*	(*	+AB
(	(*	+ABC
-	(-	*+ABC
(	(- (	*+ABC
D	(- (	*+ABCD
E	(- (-	*+ABCD
)	(- (-	*+ABCDE
)	(-	*+ABC-DE
^		-*+ABC-DE
(	^	-*+ABC-DE
F	^(	-*+ABC-DE
+	^(+	-*+ABC-DEF
G	^(+	-*+ABC-DEF
)	^	-*+ABC-DEFG
		-*+ABC-DE+FG

prefix: ^ - *+ABC-DE+FG

Postfix

Expression	Stack	Postfix
C	C	
C	C C	
A	C C	A
+	C C +	↑
B	C C +	AB
)	C -	AB+
*	C *	AB+
C	C *	AB+C
-	C -	AB+C*
(	C - C	AB+C*
D	C - C	AB+C*D
)	C - C -	AB+C*D)
E	C - C -	AB+C+DE
)	C -	AB+C*DE-
)		AB+C*DE*--
^		AB+C*DE--
C	^ C	AB+C*DE--
F	^ C	AB+C*DE--F
+	^ C+	AB+C*DE--F
G	^ C+	AB+C*DE--FG
)	^	AB+C*DE--FG+

postfix: AB+C*DE--FG+^

3. A-B/(C*D^ E)

3. A-B/(C*D^E)

Expression | Stack | prefix

Expression	Stack	prefix
A		A
-	-	A
B	+-	AB
/	-/	AB
C	-/ c	AB
(	-/(	ABC
*	-/(*	ABC
D	-/(*	ABCD
^	-/ C*^	ABCD
E	-/ C*^	ABCDE
)	-/	AB*C^DE
		A/B*C^DE

prefix = -A/D * C^DE

postfix:

Expression | Stack | postfix

Expression	Stack	postfix
A		A
-	-	A
B		AB
/	-/	AB
C	-/(	AB
(	-/(	ABC
*	-/(*	ABC
D	-/(*	ABCD
^	-/(*^	ABCD
E	-/(*^	ABCDE
)	-/	ABCDE^*
		ABCDE^*/-

postfix : ABCDE^*/-

4. (A+B^ D)/(E-F)+G

4. (A+B^D) / (CE-F) + G

prefix

Expression	Stack	prefix
)	)	
A	)	A
+	(+	A
B	(+	AB
^	(+^	AB
D	(+^	ABD
)		+A^BD
/	-/	+A^BD
(	/(	+A^BD
E	/(	+A^BDE
-	/(-	+A^BDE
F	/(-	+A^DDEF
)	/	+A^BD-EF
+	/+	/+A^BD-EF
G	/+	/+A^BD-EFG

prefix = /+A^BD-EFG.

postfix

expression	Stack	postfix
(	(	
A	(	A
+	(+	A
B	(+	AD
^	(+^	AB
D	(+^	ABD
)		ABD^+
/	/	ABD^+
(	/(	ABD^+
E	/(	ABD^+E
-	/(-	ABD^+E
F	/(-	ABD^+EF
)	/	ABD^

5. A*(B+D)/E-f*(G+H/K)

5. A*(B+D)/E-f*(G+H/K)

prefix:

Expression	Stack	prefix
A		A
*	*	A
C	*(	A
B	*(C	AB
+	*(+	AB
D	* C+	ABD
)	*	*+BD
/	/	*A+DD
E	/	*A+ BDE
-	-	/*A+ BDE
f	-	/*A+BDEf
*	-*	/*A+ BDEf
(	-*(	/+A+BDEf
G	-*(	/*A+BDEfG
+	-*C+	/*A+BDEfG
H	-*C+	/*A+DDEfGH
/	-*C+/	(*A+BDEfGH
K	-*C+/	/*A+BDEfGHK
)	-*	/*A+BDEf+G/HK

prefix = -/*A+BDE*f+G/HK

postfix:

Expression	Stack	postfix
A		A
*	*	A
(	*(	A
B	*(	AB
+	*(+	AB
D	*(+	ABD
)	*	ABD+
/	/	ABD+*
E	/	ABD+*E{
-	-	ABD+*E/
f	-	ABD+*E/f
*	-*	ABD+*E/f
C	-*(	ABD+*E/f
G	-*(	ABD+*E/fh
+	-*(+	ABD+*E/fh
H	-*(+	ABD+*E/fGH
/	-*(+/	ABD+*E/+GH
K	-*(+/	ABD+*E/+GHK
)	-*	ABD+*E/fGHK/+*

postfix : ABD+*E/fGHK(+*-