

Q # 1

$A=7$ $B=6$ $C=5$ $D=4$ $E=3$ $F=2$ $G=1$

~~ABC~~ $- + - AB^*C + DE + FG$

$GE + ED + C^*BA - + -$

2	
1	

$2+1=3$

4	3	3

$4+3=7$

5	7	3

$5*7=35$

7	6	35
		3

7	6	35	3

$7-6=1$

	1	35	3

$1+35=36$

36	3	

$36-3=33$

33		

Q#1.

Convert to prefix and calculate output

$$((A-B)+C*(D+E))-(F+G)$$

$$)G+F(-))E+D(*C+)B-A(($$

Input	Stack	Output
(	)	G
G	)	G
+	) +	G
F	) +	GF
(	) + (	GF +
-	-	GF +
)	-)	GF +
)	-))	GF +
E	-))	GF + E
+	-)) +	GF + E
D	-)) +	GF + ED
(	- ) ) + (	GF + ED +
*	-)) *	GF + ED +
C	-)) *	GF + ED + C
+	-)) +)	GF + ED + C *
)	-)) +)	GF + ED + C *
B	-)) +)	GF + ED + C * B
-	-)) +) -	GF + ED + C * B
A	-)) +) -	GF + ED + C * B A
(	- ) ) + ) - (	GF + ED + C * B A -
(	- ) ) + ) - (	GF + ED + C * B A - +
		GF + ED + C * B A - + -

Reverse

$$- + - AB * C + DE + FG$$

Q#2

Convert to postfix and calculate.

$$A-B-C*(D+E/F-G)-H$$

Input	Stack	Output
A		A
-	-	A
B	-	AB
-	-	AB-
C	-	AB-C
*	- *	AB-C
(	- * (	AB-C
D	- * (	AB-CD
+	- * (+	AB-CD
E	- * (+	AB-CDE
/	- * (+ /	AB-CDE
F	- * (+ /	AB-CDEF
-	- * (-	AB-CDEF/+
G	- * (-	AB-CDEF/+G
)	- *	AB-CDEF/+G-
-	-	AB-CDEF/+G--
H	-	AB-CDEF/+G--H
		AB-CDEF/+G--H-

$$A=8 \quad B=2 \quad C=3 \quad D=6 \quad E=9 \quad F=10 \quad G=11 \quad H=13$$

$\begin{array}{r} 2 \\ 8 \end{array}$	$8-2=6$	$\begin{array}{r} 10 \\ 9 \\ 6 \\ 3 \\ 6 \end{array}$	$9/10=0.9$	$\begin{array}{r} 0.9 \\ 6 \\ 3 \\ 6 \end{array}$	$6+0.9=6.9$
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$\begin{array}{r} 11 \\ 6.9 \\ 3 \\ 6 \end{array}$	$6.9-11=-4.1$	$\begin{array}{r} -4.1 \\ 3 \\ 6 \end{array}$	$-4.1 \times 3 = -12.3$	$\begin{array}{r} -12.3 \\ 6 \end{array}$	$6 - (-12.3) = 18.3$
				$\begin{array}{r} 13 \\ 18.3 \end{array}$	$18.3 - 13 = 5.3$