

COMPLETE Q1b, Q1d, Q2b and Q2d

Q1 Transform the given infix expressions to fully parenthesized expressions and then convert to prefix and postfix expressions.

	Infix Expressions	Parenthesized infix expression	Prefix	Postfix
a.	$A * B + C * D$	$((A * B) + (C * D))$	+ * A B * C D	A B * C D * +
b.	$A + B + C + D$	$((((A + B) + C) + D)$	+++ABCD	AB+C+D+
c.	$(X + Y) * Z + V$	$(((X + Y) * Z) + V)$	+ * + X Y Z V	X Y + Z * V +
d.	$(A + B) * C - (D - E) * (F + G)$	$(((A + B) * C) - ((D - E) * (F + G)))$	- * + ABC * - DE + FG	AB+C*DE-FG+*-
e.	$10 + 3 * 5 / (16 - 4)$	$(10 + ((3 * 5) / (16 - 4)))$	+ 10 / * 3 5 - 16 4	10 3 5 * 16 4 - / +

Q2 Use the Stack to evaluate the following postfix expressions:

	Expression	Result - Stack represented as a list - items are added to the right side of the list
a.	$17 \ 10 + 3 * 9 /$	[17]->[17,10]->[27]->[27,3]->[81]->[81,9]->[9]
b.	$2 \ 3 * 4 +$	[2] -> [2, 3] -> [6] -> [6, 4] -> [10]
c.	$1 \ 2 + 3 + 4 + 5 +$	[1]->[1,2]->[3]->[3,3]->[6]->[6,4]->[10]->[10,5]-> [15]
d.	$1 \ 2 \ 3 \ 4 \ 5 * + * +$	[1] -> [1, 2] -> [1, 2, 3] -> [1, 2, 3, 4] -> [1, 2, 3, 4, 5] -> [1, 2, 3, 20] -> [1, 2, 23] -> [1, 46] -> [47]

