Val DeLeon
CS 2400

Chapter 5 Problem Solving

1. **Use** a stack to manually convert the following infix expression to postfix expression:
   ➔ $a * b / (c - a) + d * e$

Next Character In Infix Expression	Postfix Form	Operator Stack (bottom to top)
a	a	
*	a	*
b	ab	*
/	ab*	/
	ab*	/
(	ab*	/ (
c	ab*c	/ (
-	ab*c	/ (-
a	ab*ca	/ (-
)	ab*ca-	/ (
	ab*ca-/	/
+	ab*ca-/	+
d	ab*ca-/	+
*	ab*ca-/d	+ *
e	ab*ca-/de	+ *
	ab*ca-/de*	+
	ab*ca-/de*+	

2. **Use** a stack to manually evaluate the postfix expression obtained from Task 1, assuming that:
   ➔ a = 2
   ➔ b = 3
   ➔ c = 4
   ➔ d = 5
   ➔ e = 6

Row 1 labels: a b * * *3 *3 2*3 2*3 c a - - -2 -2 4-2 4-2

a	b	*	*	*3	*3	2*3	2*3	c	a	-	-	-2	-2	4-2	4-2
2	3 2	3 2	3 2	2	2		6	4 6	2 4 6	2 4 6	2 4 6	4 6	4 6	6	2 6

Row 2 labels: / / /2 6/2 6/2 d e * * *6 *6 5*6 5*6 + + +30 +30 3+30 3+30

/	/	/2	6/2	6/2	d	e	*	*	*6	*6	5*6	5*6	+	+	+30	+30	3+30	3+30
2 6	2 6	6		3	5 3	6 5 3	6 5 3	6 5 3	5 3	5 3	3	30 3	30 3	30 3	3	3		**33**