

Adrian Beloqui
Spring 2017CSC 36000
Assignment #4

Section 11

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CONVERSION DISPLAY		
Infix Expression	Postfix Expression	Stack Contents (Top to Bottom)
8-3+5	EMPTY	EMPTY
-3+5	8	EMPTY
3+5	8	-
+5	83	-
5	83-	+
EMPTY	83-5+	EMPTY
EVALUATION DISPLAY		
POSTFIX Expression		Stack Contents (Top to Bottom)
83-5+		EMPTY
3-5+		8
-5+		83
5+		5
+		55
EMPTY		10
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$8 - 3 + 5 = 10$$

CONVERSION DISPLAY		
Infix Expression	Postfix Expression	Stack Contents (Top to Bottom)
8-(3+5)	EMPTY	EMPTY
-(3+5)	8	EMPTY
(3+5)	8	-
3+5)	8	-(
+5)	83	-(
5)	83	-(+
)	835	-(+
EMPTY	835+-	EMPTY

EVALUATION DISPLAY		
POSTFIX Expression		Stack Contents (Top to Bottom)
835+-		EMPTY
35+-		8
5+-		83
+-		835
-		88
EMPTY		i
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$8 - (3 + 5) = 0$$

Infix Expression	CONVERSION DISPLAY	
	Postfix Expression	Stack Contents (Top to Bottom)
3+4*5	EMPTY	EMPTY
+4*5	3	EMPTY
4*5	3	+
*5	34	+
5	34	+
EMPTY	345*+	EMPTY

POSTFIX Expression	EVALUATION DISPLAY	
		Stack Contents (Top to Bottom)
345*+		EMPTY
45*+		3
5*+		34
*+		345
+		320
EMPTY		23
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$3 + 4 * 5 = 23$$

CONVERSION DISPLAY		
Infix Expression	Postfix Expression	Stack Contents (Top to Bottom)
3*7-4/2	EMPTY	EMPTY
*7-4/2	3	EMPTY
7-4/2	3	*
-4/2	37	*
4/2	37*	-
/2	37*4	-
2	37*4	-/
EMPTY	37*42/-	EMPTY

EVALUATION DISPLAY		
POSTFIX Expression		Stack Contents (Top to Bottom)
37*42/-		EMPTY
7*42/-		3
*42/-		37
42/-		21
2/-		214
/-		2142
-		212
EMPTY		19
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$3 * 7 - 4 / 2 = 19$$

Infix Expression	CONVERSION DISPLAY Postfix Expression	Stack Contents (Top to Bottom)
(7+2)*3	EMPTY	EMPTY
7+2)*3	EMPTY	(
+2)*3	7	(
2)*3	7	(+
)*3	72	(+
*3	72+	EMPTY
3	72+	*
EMPTY	72+3*	EMPTY

POSTFIX Expression	EVALUATION DISPLAY	Stack Contents (Top to Bottom)
72+3*		EMPTY
2+3*		7
+3*		72
3*		9
*		93
EMPTY		27
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$(7 + 2) * 3 = 27$$

Infix Expression	CONVERSION DISPLAY Postfix Expression	Stack Contents (Top to Bottom)
3*(2-6)	EMPTY	EMPTY
* (2-6)	3	EMPTY
(2-6)	3	*
2-6)	3	*(
-6)	32	*(
6)	32	*(-
)	326	*(-
EMPTY	326-*	EMPTY

POSTFIX Expression	EVALUATION DISPLAY	Stack Contents (Top to Bottom)
326-*		EMPTY
26-*		3
6-*		32
-*		326
*		3-4
EMPTY		-12
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$3 * (2 - 6) = -12$$

CONVERSION DISPLAY		
Infix Expression	Postfix Expression	Stack Contents (Top to Bottom)
(2+3)*(6-4)	EMPTY	EMPTY
2+3)*(6-4)	EMPTY	(
+3)*(6-4)	2	(
3)*(6-4)	2	(+
)*(6-4)	23	(+
*(6-4)	23+	EMPTY
(6-4)	23+	*
6-4)	23+	*(
-4)	23+6	*(
4)	23+6	*(-
)	23+64	*(-
EMPTY	23+64-*	EMPTY

EVALUATION DISPLAY		
POSTFIX Expression		Stack Contents (Top to Bottom)
23+64-*		EMPTY
3+64-*		2
+64-*		23
64-*		5
4-*		56
-*		564
*		52
EMPTY		10
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$(2 + 3) * (6 - 4) = 10$$

CONVERSION DISPLAY		
Infix Expression	Postfix Expression	Stack Contents (Top to Bottom)
(3+4)*8-(7*3-4)	EMPTY	EMPTY
3+4)*8-(7*3-4)	EMPTY	(
+4)*8-(7*3-4)	3	(
4)*8-(7*3-4)	3	(+
)*8-(7*3-4)	34	(+
*8-(7*3-4)	34+	EMPTY
8-(7*3-4)	34+	*
-(7*3-4)	34+8	*
(7*3-4)	34+8*	-
7*3-4)	34+8*	-(
*3-4)	34+8*7	-(
3-4)	34+8*7	-(*
-4)	34+8*73	-(*
4)	34+8*73*	-(-
)	34+8*73*4	-(-
EMPTY	34+8*73*4--	EMPTY

EVALUATION DISPLAY		
POSTFIX Expression		Stack Contents (Top to Bottom)
34+8*73*4--		EMPTY
4+8*73*4--		3
+8*73*4--		34
8*73*4--		7
*73*4--		78
73*4--		56
3*4--		567
*4--		5673
4--		5621
--		56214
-		5617
EMPTY		39
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$(3 + 4) * 8 - (7 * 3 - 4) = 39$$

Infix Expression	CONVERSION DISPLAY	
	Postfix Expression	Stack Contents (Top to Bottom)
4*3/2+4*5*2-8/4/2	EMPTY	EMPTY
*3/2+4*5*2-8/4/2	4	EMPTY
3/2+4*5*2-8/4/2	4	*
/2+4*5*2-8/4/2	43	*
2+4*5*2-8/4/2	43*	/
+4*5*2-8/4/2	43*2	/
4*5*2-8/4/2	43*2/	+
*5*2-8/4/2	43*2/4	+
5*2-8/4/2	43*2/4	+
*2-8/4/2	43*2/45	+
2-8/4/2	43*2/45*	+
-8/4/2	43*2/45*2	+
8/4/2	43*2/45*2*+	-
/4/2	43*2/45*2*+8	-
4/2	43*2/45*2*+8	-/
/2	43*2/45*2*+84	-/
2	43*2/45*2*+84/	-/
EMPTY	43*2/45*2*+84/2/-	EMPTY

POSTFIX Expression	EVALUATION DISPLAY	
		Stack Contents (Top to Bottom)
43*2/45*2*+84/2/-		EMPTY
3*2/45*2*+84/2/-		4
*2/45*2*+84/2/-		43
2/45*2*+84/2/-		12
/45*2*+84/2/-		122
45*2*+84/2/-		6
5*2*+84/2/-		64
2+84/2/-		645
2*+84/2/-		620
*+84/2/-		6202
+84/2/-		640
84/2/-		46
4/2/-		468
/2/-		4684
2/-		462
/-		4622
-		461
EMPTY		45
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$4 * 3 / 2 + 4 * 5 * 2 - 8 / 4 / 2 = 45$$

Infix Expression	CONVERSION DISPLAY	
	Postfix Expression	Stack Contents (Top to Bottom)
5*((9/3+1)*(6-4))+1	EMPTY	EMPTY
((9/3+1)(6-4))+1	5	EMPTY
((9/3+1)*(6-4))+1	5	*
(9/3+1)*(6-4))+1	5	*(
9/3+1)*(6-4))+1	5	*((
/3+1)*(6-4))+1	59	*((
3+1)*(6-4))+1	59	*((/
+1)*(6-4))+1	593	*((/
1)*(6-4))+1	593/	*((+
)*(6-4))+1	593/1	*((+
*(6-4))+1	593/1+	*(
(6-4))+1	593/1+	*(*
6-4))+1	593/1+	*(*(
-4))+1	593/1+6	*(*(
4))+1	593/1+6	*(*(-
))+1	593/1+64	*(*(-
)+1	593/1+64-	*(*
+1	593/1+64- *	*
1	593/1+64- **	+
EMPTY	593/1+64- **1+	EMPTY

POSTFIX Expression	EVALUATION DISPLAY	
		Stack Contents (Top to Bottom)
593/1+64- **1+		EMPTY
93/1+64- **1+		5
3/1+64- **1+		59
/1+64- **1+		593
1+64- **1+		53
+64- **1+		531
64- **1+		54
4- **1+		546
- **1+		5464
**1+		542
*1+		58
1+		40
+		401
EMPTY		41
EMPTY		EMPTY

ORIGINAL EXPRESSION AND THE ANSWER:

$$5 * ((9 / 3 + 1) * (6 - 4)) + 1 = 41$$

END OF PROGRAM OUTPUT