



COLLEGE OF ENGINEERING & TECHNOLOGY

Department : Computer Engineering

Lecturer : Dr. Manal Helal

Course : Data Structures

Course No. : CC2215

TAs : Eng. Nour S. Eissa,

Application on Stack (Postfix/Infix conversion & Evaluation)

Convert the following expressions to their postfix equivalents and evaluate them using stacks.

a) $\frac{2+3*4}{3+2}$

b) $\frac{2*(2+3)}{2+\frac{1}{2}}$

c) $\frac{(2+4)*(1+2)^2}{(1+4)/(2+2^3)}$

Solutions:

a)

Inline Expression : $(2 + 3 * 4) / (3 + 2)$

Postfix Expression : $2 3 4 * + 3 2 + /$

)
+
(
/
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*
+
(

S

	*	+	+	/	
4		2			
3	12	3	5		
2	2	14	14	2.8	

b)

Inline Expression: $(2 * (2 + 3)) / (2 + 1 / 2)$

Postfix Expression: $2 2 3 + * 2 1 2 / + /$

)
/
+
(
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+
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	+	*	/	+	/
			2		
3		1	0.5		
2	5	2	2	2.5	
2	2	10	10	10	4

c)

Inline Expression: $((2 + 4) * (1 + 2)^2) / ((1 + 4) / (2 + 2^3))$

Postfix Expression: $2 4 + 1 2 + 2 ^ * 1 4 + 2 2 3 ^ + / /$

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	+	+	^	*	+	^	+	/	/
						3			
						2	8		
	2	2		4	2	2	10		
4	1	3	9	1	5	5	5	0.5	
2	6	6	6	54	54	54	54	54	108