

## Project 5

For this project you will be writing a program that simulates a simple calculator.

Specifications:

1. Your calculator should perform addition (+), subtraction (-), multiplication (\*), and division (/) operations.
2. All numeric input values will be single digit, positive integers. Intermediate and final results will be integers; they may be positive or negative and contain up to 9 digits.
3. Expressions may be nested using parenthesis.
4. Your program will evaluate expressions and produce a result for each expression. Your program will use the standard order of operations when evaluating expressions.
5. Each line of the input file will contain a complete (possibly nested) expression. There will be no spaces in the expression. The syntax of the expression will be correct. Each line of the output will be the result of a single expression.
6. Input will come from standard input (cin); output will go to standard output (cout).
7. **Your program should use vectors and recursion for evaluating the individual expressions.**

Sample Input	Corresponding Output
$4+7+2*8$	27
$7/3$	2
$6*(4+3)/2$	21
$(3+4)*(2-5)$	-21
$(3*(2+6)-4)/(9-4)$	4
$1-(2+(8+(2-3*5))/5*4)+1$	4

Date due: Sunday, 13 December 2009, 11:59 pm.

To turn in: A single .cpp file containing your neatly formatted and well documented program. The file should be named *yourlastnameP5.cpp* and should be copied to the course dropbox (~tiawatts/cs215drop)