CS200 Fall 2016 homework 1

name:
id:

1. Given the following grammar for identifiers (Id):

   Id = Let | Id Let | Id Dig
   Let = a | b | c
   Dig = 0 | 1

write a regular expression defining identifiers

2. Given the following two grammars for matching parentheses

Grammar 1:   S = ( ) | (S)

Grammar 2:   M = ( ) | (M) | M M

2a. Show a derivation of ((( ))) using Grammar 1, starting with S

2b. Show a derivation of   (( )) ( )   using Grammar 2, starting with M

2c. Is   ( ) ( )   produced by
   1. Grammar 1?   (Y/N)

   2. Grammar 2? (Y/N)

2d. Is (( )) produced by
   1. grammar 1 ?   (Y/N)

   2. grammar 2 ?   (Y/N)

3. Complete the following table, keeping the operands in the same order

Prefix expression	Infix expression	Postfix expression
* + a b c	(a+b) * c	a b + c *
	a - b + c - d	
* / a b + c d		
		a b c d - - *
	true or true and false	