CS16, UCSB
Pre-lab #3: Worth 50% of Lab 3 score (50 total points)

Print this form, staple loose pages together, and write
your answers on it.

Accepted: On paper, in lab Wednesday, July 18.

Name (2 pts): _____

Email (2 pts): _____

Lab section (2 pts) Circle one: 2:00   3:30

If you have the book, read through section 3.3 (pg. 101)
and also section 4.4. Then answer the following questions.

1.(6 pts) Each of the following phrases describes the
meaning of a C relational operator. Write the correct
operator on the blank line next to each one.

   a.is greater than: _____

   b.is greater than or equal to: _____

   c.is less than: _____

   d.is less than or equal to: _____

   e.is equal to: _____

   f.is not equal to: _____

2.(8 pts) Complete the following table (known as a "truth
table") by writing either True or False on each blank line.
For example, the first blank asks for the result of (A &&
B) when A is True and B is True.

A	B	A && B	A || B
True	True		
True	False		
False	True		
False	False		

3.(8 pts) Let `grade` be a char variable, and let `score` be an int variable that has already been assigned a value. Write an if/else structure that sets `grade` to:
 'A' if `score` is greater than or equal to 90,
 'B' if `score` is at least 80 but less than 90,
 'C' if `score` is at least 70 but less than 80,
 'D' if `score` is at least 60 but less than 70, or
 'F' if `score` is less than 60.

4.(8 pts) Let `min` be an int variable representing the minimal score possible for a given grade, and `grade` be a char variable representing the grade. Write a switch statement that sets `min` to:
 90 if `grade` = 'A',
 80 if `grade` = 'B',
 70 if `grade` = 'C',
 60 if `grade` = 'D',
 0 if `grade` = 'F', or
 -1 if `grade` is any other character.

5.(5 pts) In your own words, define "pseudocode" and explain why it is useful. (You may need to consult http://en.wikipedia.org/wiki/Pseudocode)

6.(5 pts) Let `x` and `y` be two int variables. Write a boolean expression in C that will be true if either `y` is 0 or if `x` divided by `y` (with C's integer division) is 5. Under no circumstances should it be attempted to divide `x` by `y` if `y` is 0.

7.(5 pts) Explain why your expression in question 6 never tries to divide `x` by `y` if `y` is 0. (Hint: there is a specific term for this discussed in lecture.)

8.(5 pts) Write parenthesis in the following boolean expression that reflect precisely the order of operations chosen by C. For example, in the expression `x && y && z`, C understands this as `((x && y) && z)`.

  x && y + 1 > 7 || 2 > y && x

Pre-lab End. Adapted from Michael Costanzo by Kyle Dewey.