## CS 1713, Intro. to Computer Science, Exam 1

(25) 1. Consider the following command entered on runner:

runner% cc -o prog prog.c

- (a) Explain with just one word what the command is doing.
- (b) What is the reason for "-o prog" (what purpose does it serve)?
- (c) How would you execute the program produced by this command?

(d) Show how to execute this program and to use redirection to send the output to a file named outfile rather than to the terminal.

(25) 2. Insert code into the C program below so that it will print the Centigrade temperature corresponding to an input value for the Fahrenheit temperature. You need to supply the prototype and definition of a function ftoc, which takes a double representing Fahrenheit as its input parameter and returns the Centigrade temperature using the formula:

```
C = (5/9)(F - 32).
```

```
#include <stdio.h>
/* prototype for function ftoc here*/
void main(void)
{
    double F, C;
    scanf("%lf", &F);
    C = ftoc(F);
    printf("Fahrenheit: %.2f = Centigrade: %.2f\n", F, C);
}
/* insert definition of ftoc here */
```

- (25) 3. Write a *complete* C program which will do the following:
  - declare a variables n.
  - read a value for n, using scanf.
  - use a while loop to print the odd integers from 1 to n, including n if n is odd, printing them on one line with a single blank between each number.
- (25) 4. Consider the following table of grades based on numerical averages:

Average	Grade
90-100	'A'
80-89	'B'
70-79	′ C ′
60-69	'D'
0-59	'F'
Otherwise	'N'

Write a *complete* C program that will use scanf to read a value for the integer variable ave, and will use an if-else to give a char variable grade the correct letter, based on this table. Then the program should print the values of ave and grade, using a %c format for a single character.