Fs11 name_____

TEST #1
CS 53

(neatly)

Instructions

1.) Read **all** instructions or suffer the consequences.
2.) No materials other than your pencil and eraser are allowed or required for this test.
3.) Do not cheat.
4.) If you are actually dead, don't bother answering question #6, since it is only for the living.
5.) **Important:** For this and succeeding tests, you may assume that there are **NO** typos in the test. This is very important as you will be evaluating C++ code fragments at times. Take the code fragments in the tests this semester as exact. If there is a 'mistake', then it should be evaluated as such; i.e. if the mistake makes the code noncompilable, say so. So, please do not come up to me during the test and ask something like "is there supposed to be a semicolon here?" You may also assume that all pertinent system include files are included for my program fragments and that variables are implicitly declared.
6.) Place answers in blanks if they are provided. If you are asked to write a short answer, make it literate. I have little patience four ill-literum-cy .
7.) If you have a question about a problem/question, be sure to ask (except as noted above).
8.) If you are asked to give code for a problem, give **all** pertinent code. Do not worry about commenting your code **on a test** in this class unless asked specifically to do so.
9.) Good Luck.

1. State the syntax rules for naming variables in a C++ program.
[5]

2. What is wrong with the following variable names: `x-y  _x+yz  you&tube  67bob  what?`
[2]

☐ Everything ☐ Nothing

What is right with the following variable names: `shoe_size  hair_length  NumRabbits`

☐ Everything ☐ Nothing

3. State at least one good reason for using constants in your programs.
[5]

4. It is very important to understand the precision for any given type declaration. What is the number of significant figures obtained from using a
[4]

a) float?

b) double?

5. Given the following declarations:
[12]

```
short first_num = 5, another_num = 0, third = 3, answer;
bool stop = false, go = true, result;
```

evaluate the following expressions:

a) `result = (stop || go) && third;` result is _____

b) `result = stop || (!another_num) && (another_num != first_num);`

result is _____

c) `answer = stop * (first_num + third) - another_num;` answer is _____

d) `first_num += third;` first_num is _____

third is _____

e) `answer = first_num / third;` answer is _____

6. Given the following code
[12]

```
char var;
cin>>var;          //assume prompted
switch (var)
{
  case 'a':
    cout<<"hello";
    break;
  case 'b':
    cout<<"world";
  case 'c':
    cout<<"!";
  default:
    cout<<" Goodnight Moon";
}
```

a) What is the output if the user enters `a` ?

b) What is the output if the user enters `b` ?

c) What is the output if the user enters `c` ?

d) What is the output if the user enters `f` ?

7. Given the declarations in #5 above, write an equivalent if-else statement for the following code:
[5]

```
answer = (!stop)? first_num : another_num;
```

8. What does `#include<iostream>` do for your program?
[5]

9. Write a block of code that will prompt for/ read in an integer, `Bob`, and guarantee that the value read in will indeed be an odd number from 5 to 199, inclusive. Assume all variables are declared and it is embedded in an otherwise working program.
[12]

10. Show how you would fix the problem with this code:
[8]

```
float average;
int total, count;
      ...
average = total / count ;
```

11. Find and circle the errors in this code and briefly describe them on the lines provided.
[10]

```
int main[]
(
  float radius
  constant float PI;
  cout>>"enter radius:  ;
  cin<<radius;
  cout<<"area is "<<PI*radius^2<<endl;
  return ☺
}
```

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12. Write a **complete (yes, complete)** program in C++ that will prompt/readin three integers from the user, and will output the minimum, maximum, and average of the values. Have your program ask the user if he/she/it would like to repeat and do so if desired.

[20]