Sample Exam 1

CSI 201: Computer Science 1
Fall 2016
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Question	Points	Score
1	20	
2	18	
3	20	
4	10	
5	10	
Total:	78	

I understand that this exam is closed book and closed note and is to be completed without a calculator. I am **NOT** allowed to use any external resources to complete this exam. All of the work that I am submitting for this exam is my own, and has been completed in accordance with the Washington College Honor Code.

Name: _____

Signature: _____

Section: _____

1. 20 points Write the output that each code snippet would produce:

Code Snippet:	Console Output:
```cpp\nint a = 4;\ndouble b = 2.0;\ncout << a / b + 1 << endl;\n```	
```cpp\nif (3/4 == 0) {\n cout << 5 << endl;\n}\nelse {\n cout << -3 << endl;\n}\n```	
```cpp\nfor(int k = 0; k < 4; ++k) {\n cout << k/2.0 << endl;\n}\n```	
```cpp\nfor (int k = 3; k < 11; k+=3) {\n cout << k + 1 << endl;\n}\n```	
```cpp\nint b = 2;\nfor (int i = 0; i < 3; ++i) {\n if(i != 2) {\n b = b * 2;\n }\n cout << b << endl;\n}\n```	

2. Concepts: answer each question briefly.

  (a) ⌷3 points⌷ Name three C++ fundamental types.

  (b) ⌷3 points⌷ Show how to declare a variable called `number_of_pigs`, without initializing it. Use the most appropriate variable type.

  (c) ⌷3 points⌷ Why does this expression evaluate to true?
```
1.0 + 1e-40 == 1.0
```

  (d) ⌷3 points⌷ Give six C++ conditional operators. *(0.5 points each)*

  (e) ⌷3 points⌷ Name three (non-type) C++ reserved keywords.

  (f) ⌷3 points⌷ Why should you not do this?
```
for(double x = 0.0; x != 5.0; x = x + 0.1)
{
    ...
}
```

3. $\boxed{\text{20 points}}$ Find four kinds of errors in the following code snippet. Identify each error that you found in the space below. There may be more than four errors, but you only need to find four. Do not include duplicate errors; that is, if two lines are missing semicolons, only include one of them. Refer to lines by the given line numbers.

```
1.   // Prompt the user for two numbers
2.   int 1st, 2nd;
3.   cout >> "Enter first number: ";
4.   cin >> 1st;
5.   cout << "Enter second number: "
6.   cin >> 2nd;
7.
8.   // Print out which number is bigger
9.   if (1st < 2nd) {
10.      cout << "1st is bigger" << endl;
11.  }
12.  else {
13.      cout << "2nd is bigger" << endl;
14.  }
```

Error 1. _____

Error 2. _____

Error 3. _____

Error 4. _____

4. ☐ 10 points ☐ Write a program that prompts a user for an integer. It then writes whether
the integer is divisible by 7. (You may assume that you are writing code inside `main`,
and that all libraries required are properly included.)

5. ☐ 10 points ☐ Assume that variables `a` and `b` are both of type `int` and have already been
defined. Write a code snippet that will check if `b` is bigger than `a`, and if so will swap
their values (so that at the end, `a` holds the bigger number, and `b` the smaller one).