

# Math 201 - Quiz 4

February 18, 2015

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary.

1. (1 point) Try to run the following program. Then carefully explain the problem.

```
#include <iostream>
using namespace std;

int main()
{
    int sum = 0;

    for ( int i = 1; i <= 1000; i += 10 ) {
        sum += i;
        cout << i << "    " << sum << "\n";
    }

    cout << "\nThe last number is " << i;

    return( 0 );
}
```

THERE IS A COMPILE-  
TIME ERROR RIGHT  
HERE)

THE *i* IS ONLY DECLARED  
IN THE SCOPE OF THE  
FOR LOOP.

2. (2 points) Determine the value of each expression (true or false) assuming the following values have been assigned:  $a = 5$ ,  $b = 2$ ,  $c = 4$ ,  $d = 6$ , and  $e = 3$ .

(a)  $a != b$        $5 != 2$  IS TRUE

(b)  $d / c == d / a$        $1 == 1$  IS TRUE

(c)  $!(a * b) \ \&\& \ (d > e)$        $!(10)$  AND  $(6 > 3)$  → FALSE AND TRUE  
IS FALSE

(d)  $(c / b * a) \ || \ (a \% c * b)$        $10$  OR  $2$   
→ TRUE OR TRUE  
IS TRUE

3. (2 points) Write a C++ program that accepts an integer as user input and outputs a value of -1, 0, or 1 depending on whether the integer is negative, zero, or positive, respectively. (You may hand-write the program or attach a print-out.)

SEE ATTACHED SHEET.

```
1: #include <iostream>
2: using namespace std;
3:
4: int sign( int x )
5: {
6:     if ( x > 0 ) return( 1 );
7:     else if ( x < 0 ) return( -1 );
8:     else return( 0 );
9: }
10:
11: int main()
12: {
13:     int x;
14:     cout << "Enter an integer." << endl;
15:     cin >> x;
16:     cout << "\nThe sign of your number is " << sign( x );
17:
18:     return( 0 );
19: }
20:
```