

Name: _____

SSN: _____

CS 12 - Basic Proficiency Exam April 8, 1998

1. (6 pts) How many times will the following loop body execute? What values will *total* and *i* hold after the program code has completed its execution?

```
int total = 1;
int i = 2;
while (i < 11){
    total = total * i;
    i = i + 3;
}
```

(a) Loop will execute _____ times.

(b) total = _____

(c) i = _____

2. (6 pts) Write code to find the maximum of three integers, **num1**, **num2**, and **num3**. The result should be printed to the screen.

3. Determine what the following code will output.

(a) (4 pts)

```
int x=4, y=7;
x = x * 6 + y / 2;
cout << x << " " << y ;
```

(b) (8 pts)

```
void func(int &a, int b)
{
    if (a == b){
        a = 0;
        b = 0;
    }
    else{
        a = b;
        b = 10;
    }
    cout << a << " " << b << endl;
}

main()
{
    int num1 = 7;
    int num2 = 19;
    func(num1, num2);
    cout << num1 << " " << num2 << endl;
}
```

4. (6 pts) Write a function to compute the average of three integers. Your function should take the three integers as parameters and return the average.

5. (6 pts) Define an array of 10 doubles. Write code to initialize each element in the array. You may choose what values to initialize each element to. Write code to print out each element on a separate line.