

CSCI 2170 Homework 2

Name _____

(Due beginning of class on Thursday, Feb 14th)

1. Trace the execution of the following program as shown in class. Write the final output of the program:

```
#include <iostream>
using namespace std;
void mystery (int n);

int main()
{
    cout << mystery(5) << endl;
    return 0;
}

void mystery (int n)
{
    if (n <= 1)
        return n;
    else
    {
        return (mystery(n-1)+mystery(n-2));
    }
}
```

2. Given:

array "values":

| | | | | | | | | | |
|---|---|----|----|----|----|----|----|----|----|
| 2 | 5 | 10 | 15 | 23 | 44 | 47 | 53 | 77 | 86 |
|---|---|----|----|----|----|----|----|----|----|

Trace the execution of the recursive BinarySearch function when it is called with the following function call:

- (1) BinarySearch(values, 0, 9, 10, found, location)
- (2) BinarySearch(values, 0, 9, 25, found, location)

3. Write a void **recursive** function **WriteBackwards** that has one parameter which is a positive integer. When called, the function writes its argument to the screen backward. That is, if the argument is 1234, it outputs the following to the screen:
4321

```
void WriteBackwards(int number)
{
    ....
}
```