

Name: _____

Exam 2

1. (15 points) What is printed by the following program?

```
#include<iostream>
#include<string>
using namespace std;
void skipColors(int &, int &, char);
int main()
{
    int darkColor= 100;
    int lightColor = 0;
    char brightColor = 'r'; //red

    cout << "Dark: " << darkColor << endl << "Light: "
         << lightColor<< endl<< "*****" << brightColor <<
         "*****" << endl;

    skipColors(darkColor, lightColor, brightColor);

    cout << "After Function: \n";

    cout << "Dark: " << darkColor << endl << "Light: "
         << lightColor << endl<< "*****" << brightColor <<
         "*****" << endl;
}
void skipColors(int & x, int & y, char c)
{
    if (c == 'r')
    {
        c = 'b'; //blue
        x = y;
        y = 50;
    }
    else
    {
        c = 'g'; //green
        y = x;
        x = 70;
    }
    cout << x << ' ' << y << ' ' << c << endl;
}
```

Name: _____

2. (15 points) What is printed by the following code?

```
#include<iostream>
using namespace std;
int main()
{
int prices[7] = { 10, 20, 30, 40, 50, 60, 70};
int i;
for (i = 0; i < 6; i++)
    cout << prices[i] << endl;

cout << endl;

for (i = 0; i < 7; i++)
{
    if (i < 2)
        prices[i] = 30;
    if (prices[i] > 60)
        prices[i] = 100;
}

for (i = 0; i < 7; i++)
    cout << prices[i] << endl;
}
```

Name: _____

3. Give only the code needed to answer the question (including all declarations). Do not write a full program.
 - a. (5 points) Declare an array called `taxesOwed` that can hold `1000` `double` values.
 - b. (8 points) Assume that the array that you declared has values in all the elements! Use a loop to subtract `10.00` from every element in the array.
 - c. (9 points) Assume that you no longer know the values of the elements of this array! Write code that prints out how many elements have values that are between `1000` and `2000` (including `1000` and `2000`).
(Use a loop!)

4. A function `checkDivisibility` takes two `int` parameters. It returns `true` if the first parameter is divisible by the second (the second goes evenly into the first), OR the second is divisible by the first. Otherwise, the function returns `false`.
 - a. (3 points) Give an example of a call to this function from `main`.
 - b. (3 points) Write the function prototype.
 - c. (12 points) Write the function definition (header and body)

5. (10 points) Write code that
 - a. Prompts a user to enter two characters.
 - b. Prints the two characters alternating (first one then the other) 40 times.

So if the user enters `*` and `#`, the output is:

`*#*#*#*#.....etc.` for a total of 80 characters in the line.

Name: _____

6. (20 points)

Write a complete C++ program that accomplishes the task indicated below. Use good form by including comments and meaningful identifiers. Be accurate with the syntax -- as if you were typing the program on the computer.

Assume that there is a file on disk named `vacationSpots.txt` that contains information about winter vacation destinations. Each line contains the destination, the distance from NY (in miles) and the cost. Write the program on the assumption that **you do not know how many lines are in the file**. You may assume that there are **no spaces in the destination names**.

Write a C++ program that will:

- *Open the file and read in the data line by line.*
- *Call a value returning function that returns 'Y' if the destination is more than 1200 miles away, and 'N' if it is closer than 1200 miles (for each line).*
- *Print out the data according to the sample output below.*
- *Compute the total number of far destinations that are in the file.*

First two lines from Sample data file:

Miami	1089.0	213.00
Havana	1370.0	276.00

Sample Output (there will be more lines, depending on the length of the file!!)

<u>Destination</u>	<u>Distance</u>	<u>Cost</u>	<u>Far?</u>
Miami	1089.0	213.00	N
Havana	1370.0	276.00	Y

Number of destinations that are far: