Homework 2

Time due: 11:00 PM Thursday, October 17

Prepare your solutions to these homework problems as a single Word document named **hw.docx** or **hw.doc**, or a plain text file named **hw.txt**. Turn in this file as described in the Project 2 specification.

1. What is the output produced by the following program segment? Don't just run it — trace through it and figure it out by hand (which is a skill you'll need for the exams).

   ```
   string grendel = "endl";
   cout << "endl";
   cout << grendel;
   cout << endl;
   cout << "grendel";
   ```

2. Consider the following program:

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

   int main()
   {
       int side;

       cout << "Enter a number: ";
       cin >> side;

       for (int i = 0; i < side; i++)
       {
           for (int j = i; j >= 0; j--)
           {
               cout << "#";
           }
           cout << "\n";
       }
   }
   ```

   In a brief, simple English sentence, state what this program does (e.g. "It prints a picture of a jail cell"). Again, figure this out by hand.

3. Copy the program in problem 2 and change it so that for any input number, the changed program produces *exactly* the same output as the original, but the changed program uses a while loop instead of a for loop for the inner loop.

4. Copy the program you wrote for problem 3 and change it so that for any input number, the changed program produces *exactly* the same output as the original, but uses a do-while loop instead of a for loop for the outer loop. Be careful! (Hint: How does it behave if `side` is not positive?) You may need to add a little additional code to make sure the program behaves identically to the program in problem 3.

5. Assume `codeSection` has been previously declared as an `int` and given as its value the number of a section of the California Penal Code. Write a switch statement that for any value of `codeSection`, produces exactly the same output as the following if statement.

```
if (codeSection == 281)
        cout << "bigamy";
else if (codeSection == 321  ||  codeSection == 322)
        cout << "selling illegal lottery tickets";
else if (codeSection == 383)
        cout << "selling rancid butter";
else if (codeSection == 598)
        cout << "injuring a bird in a public cemetery";
else
        cout << "some other crime";
```