This is extra-credit homework to get more practice with programming, small steps at a time. Odd-numbered problems have answers on the next page, while you get credit for any even-numbered answers turned in. Practice doing both even and odd problems, using the answers as a guide afterward.

First, create a basic C++ program:

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

int main()
{
    return 0;
}
```

For the turn-in problems (even numbered), you can have one right after another in the same program. Use a comment to specify which part of the code belongs to which problem. Example:

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

int main()
{
    // Question 1.
    int number;

    // Question 2.
    char letter;

    return 0;
}
```

Submit the .cpp (C++ Source) file once you are done.

Questions: Nesting If Statements

Points possible: 1

1.	Create a string called **userChoice**, and create an integer called **age**. Output the text, **What do you want to drink?** Get the user's input and store it in **userChoice**. If the user's choice is **Beer**, then ask the user to input their **age**. If **age** is greater than or equal to 21, output the text **Beer**. Otherwise, output **No beer for you.** If the user's choice wasn't Beer, then output the text **Here, have a** , followed by the value of **userChoice** to the screen.
2.	Create a float called **money**, another float called **price** and set to **9.99**, and a string called **wantToBuy**. As the user, **Do you want to buy item for $** , and then output the value of **price**. Get the user's input and store it in **wantToBuy**. If **wantToBuy** is equal to **yes**, then ask the user **How much money do you have?** Store the user's answer in **money**. If **money** is greater or equal to the **price**, output **SOLD!** Otherwise, output **You don't have enough money.** If **wantToBuy** is equal to **no**, then output **Get outta here!**

Answers: Nesting If Statements

1.

```
string userChoice;
int age;

cout << "What do you want to drink? ";
cin >> userChoice;

if ( userChoice == "Beer" )
{
    cout << "What is your age? ";
    cin >> age;
    if ( age >= 21 )
    {
        cout << "Beer!" << endl;
    }
    else
    {
        cout << "No beer for you" << endl;
    }
}
else
{
    cout << "Here, have a " << userChoice << endl;
}
```

Questions: Nesting Loops

Points possible: 1

3.	Create a boolean variable called **done** and set it equal to **false.** Create a while loop that continues looping while **done** is not true (or, **done** is false). Inside the loop, ask the user if they want to quit. Store their input in a char variable named **choice**. Create an inside while loop that continues looping while the user input is invalid – in this case, while **choice** is not 'y' and **choice** is not 'n'. Inside the inner while loop, output **Invalid choice** and have the user input a new value to store into **choice**. After the inner while-loop, check to see whether **choice** is equal to '**y**'. If it is, set **done** to **true**.
4.	Create an integer variable called **countdown1**, and set it equal to **20**. Create a while loop that continues looping while **countdown1** is greater than **0**. Within the loop, decrement **countdown1** by **1** and output its value. Within the loop, create another integer variable called **countdown2** and set it equal to **10**. Create an inner while loop that continues looping while **countdown2** is greater than 0. Inside the countdown2 loop, decrement **countdown2** by **1** and output its value.

Answers: Nesting Loops

3.

```
bool done = false;
while ( !done )
{
    cout << "Quit? y/n: ";
    char choice;
    cin >> choice;

    while ( choice != 'y' && choice != 'n' )
    {
        cout << "Invalid choice, try again: ";
        cin >> choice;
    }

    if ( choice == 'y' )
    {
        done = true;
    }
}
```

Questions: Nesting For-Loops

Points possible: 1

5.	Create an outer for loop that uses an integer iterator variable called **y**. It begins at **0** and loops while it is less than **10**. Every loop, it increments **y** by one. Create an inner for loop that uses an integer iterator variable called **x**. It begins at **0** and loops while it is less than **20**. Every loop, it increments **x** by one. Inside the inner for loop, output an asterisk ***** without an end line. Inside the outer loop and after the inner loop, output an end line.
6.	Create an outer for loop that uses an integer iterator variable called **y**. It begins at **0** and loops while it is less than **10**. Every loop, it increments **y** by one. Create an inner for loop that uses an integer iterator variable called **x**. It begins at **0** and loops while it is less than **20**. Every loop, it increments **x** by one. Inside the inner for loop, output the value of **x** and end the line. Inside the outer loop and after the inner loop, output the value of **y** and end the line twice.

Answers: Nesting For-Loops

5.

```
for ( int y = 0; y < 10; y++ )
{
    for ( int x = 0; x < 20; x++ )
    {
        cout << "*";
    }
    cout << endl;
}
```