CSI 140 Introduction to Programming

Name: _____

1. If x has the value of 3, y has the value of -2, and w is 10, is the following condition true or false?

(x < 2 && w < y)

2. if x is 0, what is the value of (!x ==0)?

3. What is the Boolean expressions tests to see if x is between 2 and 15 (including 2 and 15)?

4. True or False

Statement	**T/F**
A switch statement can only work with integer and character data types, while if-else can work with any data type including floating-point numbers and strings.	
Both switch statements and if-else statements can check for ranges of values (e.g., x > 10 && x < 20) equally well.	
If you forget to write a break statement in a switch case, the program will automatically stop after executing that case, just like in an if-else statement.	
The default case in a switch statement is equivalent to the else clause in an if-else statement.	
An if-else ladder and a switch statement can always be used interchangeably to solve the same problem.	

5. What is wrong with the following switch statement?

```
int ans;
cout <<"Type y for yes on n for no\n";
cin >> ans;
switch (ans)
{
    case 'y':
    case 'Y': cout << "You said yes\n";
    break;
    case 'n':
    case 'N': cout << "You said no\n";
    break;
    default: cout <<"invalid answer\n";
}
```

6. What is the output of the following code?

```
int main() {
    int age ;
    bool hasLicense , carAvailable ;

    if (age >= 18) {
        if (hasLicense) {
            if (carAvailable) {
                cout << "You can drive!" << endl;
            } else {
                cout << "You need a car to drive" << endl;
            }
        } else {
            cout << "You need a license first" << endl;
        }
    } else {
        cout << "Too young to drive" << endl;
    }

    return 0;
}
```

age = 25, hasLicense = true, carAvailable = false
output:

age = 18, hasLicense = true, carAvailable = true
output:

age = 18, hasLicense = false, carAvailable = false
output:

age = 18, hasLicense = false, carAvailable = true
output:

age = 17, hasLicense = true , carAvailable = false
output:

```
switch(choice) {
    case 1:
        cout << "One";
        break;
    case 2:
        cout << "Two";
        break;
    case 3:
        cout << "Three";
        break;
}
```

choice = 2

choice = 3

```
switch(grade) {
    case 'A':
        cout << "Excellent";
        break;
    case 'B':
    case 'C':
        cout << "Good";
        break;
    case 'D':
        cout << "Pass";
        break;
    default:
        cout << "Fail";
}
```

grade = 'B'

grade = 'C'