Worksheet 1

Problem 1.

Assume that the following lines of code are inside the main function, with `#include <iostream>`, `using namespace std`, and all the string variables used having been previously declared.

```
cout << "Enter your name: ";
getline(cin, name);

cout << "\nEnter your UID: ";
int UID;
cin >> UID;

cout << "\nEnter your Major: ";
getline(cin, major);

cout << "\nEnter your residence hall: ";
getline(cin, hall);

cout << "\n" << UID << " is the ID of " << name << ", a " << major << " student
who lives in " << hall << endl;
```

(a) Circle where the bug occurs.

(b) Explain what you think will happen when running the program.

(c) Is this a logic error or a compilation error? Why?

(d) Add a fix to the problem you found in part (a).

Problem 2.

What is the output of the following code?

```
int cookies = 12;
int mms = 120;

if (mms % cookies != 0) {
cout << "Can't evenly split M&Ms for each cookie!" << endl;
} else {
cout << "We have " << mms/cookies << " M&Ms per cookie." << endl;
}
```

Problem 3.

This code snippet takes a certain “hour” and “weekday” and tries to tell you if you can buy turnips from Daisy Mae, the turnip seller.

```
int hour;
string weekday;
cin >> hour;
cin >> weekday;

if (weekday != "Sunday" || hour >= 12) {
cout >> "Daisy Mae is not here!" >> endl;
} else {
if (hour = 11) {
cout >> "It's almost 12! Hurry up!" >> endl;
} else {
cout >> "Buy turnips with Bells." >> endl;
}
```

(a) Find the 5 lines with mistakes in the code and fix them.

(b) Will this code compile? Why or why not?

(c) After you fix the bugs, imagine you input 11 for the hour, then “Monday” for the weekday. What will this program say to you?

Problem 4.
What will this program output? Can you explain every line of output?

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

int main() {
int elligent = 64;
int eresting = 0;
double rainbow = 64.0;
double stuf = 0.0;

cout << elligent << endl;
cout << rainbow << endl;

eresting = elligent/2.5;
stuf = rainbow/3;
cout << rainbow/3 << endl;
cout << stuf << endl;
cout << elligent/2.5 << endl;
cout << eresting << endl;
}
```

Problem 5.

Write a program that asks for a number between 0 and 99 and takes an integer input. If you input a number greater than or equal to 100, it will print “Liar, liar, plants for hire” and stop. Otherwise, it tells you if your number has a “tens” digit that would round up to 100.

Problem 6.

Write a program that takes in two numbers and a command of type string (“Add”, “Subtract”, “Multiply”, “Divide”). Inputting an invalid command should cause the program to print out “Invalid command!” and stop.