NAME: _____

Instructions

Work out the answers to these problems manually without the use of a computer. This will help you develop the ability to read and analyze code. Problems of this type will also appear on Quiz 1 and subsequent quizzes and exams. After coming up with answers manually, write test code to check whether you have solved the problems correctly.

Problems

```
int i = 0;
while (i < 7)
{
    cout << 2 * i;
    ++i;
}
```

Figure 1

1) When the code in Figure 1 runs, what does it output to the console? (5 points)

```
for (int i = 0; i < 7; ++i)
{
    cout << 2 * i;
}
```

Figure 2

2) Rewrite the code in Figure 2 so that it uses a while loop rather than a for loop to accomplish the same output. (5 points)

```
int k = 100;
for (int i = 0; i < k; ++i)
{
    // This is the body of the for loop.
    cout << i;
}
```

Figure 3

3) How many times does the body of the *for loop* run in the code in Figure 3? (5 points)

```
int i = 11;
while (i <= 99)
{
    i = i + 3;
}
cout << i;
```

Figure 4

4) When the code in Figure 4 runs, what does it output to the console? (5 points)

```
cout << 1 / 2 << ", " << 1 / 2.0;
```

Figure 5

5) When the code in Figure 5 runs, what does it output to the console? (5 points)

```
int i = 2;
int k = i++ * 2;
cout << ++i * 2 + k;
```

Figure 6

6) When the code in Figure 6 runs, what does it output to the console? (5 points)

7) Write a C++ program that computes the sum of integers 0 through *n*, where *n* is an integer entered by the user. (5 points)

8) Write a C++ program that prints every number between 330 and 550, inclusive. (5 points)

9) Write a program that prompts the user to enter a number between 3 and 12, inclusive. If the user enters a number inside [3, 12], the problem displays *good numbe*r, otherwise the program displays *bad number*. (5 points)

```
int i;
cin >> i;
if (i % 2 == 1) {
    cout << "odd number"
}
```

---

10) The code in Figure 10 prints *odd number* when the user enters an odd number and does not print anything when the user enters an even number. Rewrite the code so that it prints *even number* when the user enters an even number and does not print anything when the user enters an odd number. (5 points)