CPS 210 - Exam 2

Name:

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1) (10 pts) The following program will execute without an error.

```
int sum = 0;
double count = 0;
for(int i = 0; i < 10; i++) {
    sum += i;
    count++;
}
System.out.print("Count:" + count + "Sum:" + sum + "i: " + i);
```

- True
- False

Explain why:

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2) (10 pts) What is the output of the following program?

```
double x = 6.0;
int y = 2;
int z = 5;
if(z < 5 && x >= 4) {
    System.out.println("A");
} else if(z/y == 2) {
    System.out.println("B");
} else if(z/y == 2.5){
    System.out.println("C");
} else {
    System.out.println("D");
}
```

- A
- B
- C
- D

Explain why:

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3) (20 pts) Write a program that asks the user to enter an integer, double, and a word (one word, a space should stop the input). The program should then print out the integer, double, and word in the following format:

```
The integer is: 5
The double is: 3.14
The word is: Hello
```

4) (20 pts) Write a program that asks a user for an integer that is divisible by 5. If the user enters a number that is not divisible by 5, you should keep asking the user for a valid number until they enter one. Once they enter the valid number, print out the number they entered. Below is a sample run:

```
Enter a number that is divisible by 5: 3
Enter a number that is divisible by 5: 7
Enter a number that is divisible by 5: 10
10
```

5) (20 pts) Write a program that asks a user for a floating point number. Each time the user enters a number, the program should add the number to a running total. The program should keep asking the user for a number until the user enters a negative number or the total reaches 100. Once the user enters a negative number or the total reaches 100, the program should print out the running total. Below is a sample run:

```
//Negative number
Enter a number: 5.4
Enter a number: 10.2
Enter a number: 15.3
Enter a number: -5.4
The total is: 30.9

//Total reaches 100
Enter a number: 5.4
Enter a number: 10.2
Enter a number: 16.1
Enter a number: 68.3
The total is: 100.0
```

6) (20 pts) Write a program that asks a user for a positive integer. The program should then print out the number of digits in the number. Below is a sample run:

```
Enter a number: 123
The number of digits is: 3

Enter a number: 123456
The number of digits is: 6
```

Hint:
1) 100/10 = 10
2) 10/10 = 1
3) 1/10 = 0(integer division)
100 has 3 digits