

For problems 1-5, give a short answer to the question. (15 points, ~8 minutes)

- 1) (4 points) Write four Java statements that declare and initialize the following variables: A) a **long integer** with the value 12,345,678,900, B) a **String** object with the name of your favorite coffee shop, C) a **character** initialized to the dollar sign, and D) a **double** with the value 98.7654321.

- 2) (4 points) Write four Java statements to A) create a **Scanner** to read from the console, B) print the prompt "Enter an integer: ", and C) read an **integer** value from the console into a previously declared **int** variable called *myInteger*, and D) close the **Scanner**.

- 3) (2 points) Write a single statement that prints a variable of type **double** called *myDouble*, which has already been declared and initialized, with exactly 4 digits after the decimal point, followed by a **newline** character.

- 4) (3 points) What is printed by the following statements?

```
double d0 = 2.3456, d1 = 1.2345;  
boolean b = (d0 <= d1);
```

```
System.out.println (b); _____
```

```
System.out.println (!b); _____
```

- 5) (2 points) What is the value of the **boolean** variable *equals* after the following statement?

```
boolean b0 = true, b1 = false, b2 = false;
```

```
boolean equals = ((b0 && b1) || ! b2); _____
```

For problems 6-10, show what the program shown below would print (3 points each, ~6 minutes).

```
public class FirstProgram {  
  
    public static void main(String[] args) {  
  
        int i = 12;  
        int j = 5;  
        double d = 1.5;  
  
        // Output for question 6  
        System.out.printf("%.2f\n", j * d);  
  
        // Output for question 7  
        System.out.println(i % j * 3);  
  
        // Output for question 8  
        System.out.printf("%.1f\n", i + 3.0 * j);  
  
        // Output for question 9  
        System.out.println (i >= 11);  
  
        // Output for question 10  
        System.out.println ((i / j) * j + (i % j));  
    }  
}
```

6)

7)

8)

9)

10)

For problems 11-15, show what the program shown below would print (3 points each, ~6 minutes).

```
public class SecondProgram {  
  
    public static void main(String[] args) {  
  
        String first = "Computer";  
        String last = "Science";  
  
        // Output for question 11  
        System.out.println(last.length() - first.length() + 5);  
  
        // Output for question 12  
        System.out.println(first.charAt(3));  
  
        // Output for question 13  
        System.out.println(last.indexOf('e'));  
  
        // Output for question 14  
        System.out.println(first.indexOf('x'));  
  
        // Output for question 15  
        System.out.println(first.substring(1,7)); }  
    }  
}
```

11)

12)

13)

14)

15)

For problems 16-20, show what the program shown below would print (3 points each, ~6 minutes).

```
public class ThirdProgram {
    public static void main(String[] args) {
        char c0 = '&', c1 = 'c', c2 = 'w', c3 = '7';
        boolean b = (c1 >= c2);
        if (b)
            c3 = '3';
        else
            c3 = '8';
        c2--;
        switch (c3) {
            case '3':
                c0 = '*';
                c1 = 'n';
                break;
            case '7':
                c0 = '$';
                c1 = 'm';
                break;
            case '8':
                c0 = '#';
                c1 = 'q';
                break;
        }
        System.out.println(b); // Output for question 16
        System.out.println(c0); // Output for question 17
        System.out.println(c1); // Output for question 18
        System.out.println(c2); // Output for question 19
        System.out.println(c3); // Output for question 20
    }
}
```

16) _____

17) _____

18) _____

19) _____

20) _____

For problems 21 and 22, write the Java code that is requested. **NOTE:** Most of the statements requested are to do calculations, not printing. You should not print anything in the code you write on this page **except when it is explicitly requested!** (15 points, ~9 minutes)

21) (7.5 points) Write a Java conditional statement that subtracts 6.7 from a previously declared double variable called *myDouble* if its value is between 7.0 and 12.5 inclusive, or multiplies *myDouble* by 1.2 if its value is greater than or equal to 17.8. Otherwise add 3.3 to *myDouble*.

22) (7.5 points) Write a Java **switch** statement that checks the value of a variable of type **char** named *someCharacter*, and increments (adds one to) an integer variable named *specialCharacters* if the variable has the value '!', '@', '#', '\$', or '&', and increments an integer variable named *numberDigits* if the variable has the value '0' through '4', and prints "Character not recognized!" if the character is anything else. Assume all variables are previously declared.