

CSC152

Lab 1

Submission instructions

For exercises 1-3, type your answers and save them in a single text file (please use Notepad – **not Microsoft Word** – to type your answers and save them) on your Web space (U drive under My Computer). You can access Notepad through start→Programs→Accessories→Notepad. To submit a file, copy it to your folder on the network drive Labdata under CSC152-Antonios. Please do not attempt to save a file directly from DrJava or Notepad directly to your Web space. For each of exercises 4 and 5, you are to submit a java file (with a .java extension) to your folder on Labdata. Please note that once a file is copied to Labdata, you are no longer able to view its contents. Make sure that you always have a copy of your work saved on your web space or on a flash memory stick.

1. True or False
 - a. A Java program must define at least one class and a main method
 - b. A program contained in a class called `NewtonQuote` must be saved in a file called `NewtonQuote.java`
 - c. A code block is defined by a set of enclosing parentheses
 - d. The compiler checks for errors such as a missing semicolon
 - e. There are exactly four data types in Java to represent numeric values
 - f. The data type with the largest range is `double`
 - g. A variable declaration must include the type, the variable name and an initial value
 - h. `coffee cups` is a valid variable name
 - i. The assignment operator copies the value of the left operand to that of the right operand
 - j. Once a value is assigned to a variable it cannot be changed

2. What is the error in each of these declarations?

```
int a = 3.7;
```

```
int b = 399933322233;
```

```
float c = 1.22;
```

```
float x = 7.667766554F;
```

```
double miles per hour = 82.11;
```

3. What is the output of the following code segments:

Segment 1

```
int a = 11;
```

```
int b = 2;
```

```
System.out.println(a % b);
```

```
System.out.println(b % a);
```

```
System.out.println(a != b + 8);
System.out.println("a is " + a + " but b is " + b);
System.out.println("a + b: " + a + b);
System.out.println("a + b: " + (a + b));
```

Segment 2

```
double num1;
double num2;
double result;
num1 = 1.5;
num2 = num1 * 2;
result = num1 + num2;

System.out.println("num1 is: " + num1);
System.out.println("num2 is: " + num2);
System.out.println("result is: " + result);
```

4. Write a program that converts miles per hours (mph) to kilometer per hour (kph). First declare two variables, mph and kph. Initialize mph to contain the value that you'd like to convert. Then write an expression to carry out the conversion (look up the conversion factor online if you don't know it off the top of your head). Finally use a `println` statement to display kph.
5. Write a program that computes the volume of an object of your choice (such as sphere, pyramid, etc). Model your program after the cone program in Unit 2.