LCS-ES Group Meeting 2

Exercise 1: Java Identifiers and Naming Conventions

(a) For each of the following,

- Say whether it's a valid Java identifier.
- If it is, does it follow the naming conventions discussed in class?

Identifier	Valid?	Follows convention? (if not how might you fix it?)
letterCount		
MAX_SIZE		
Sandwich		
Tax-rate		
Tax_Rate		
3people		
this Is Fine		

(b) What might the following valid Java identifiers be used for? ("this is not a good identifier name" is not a necessarily a bad answer!)

Identifier	Use
listLength	
XYZ	
picklesaregreen	
msg	
temp	
firstRoot	
doubleHyphenPenalty	

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Exercise 2: Java source matching

Match each of the following five descriptions with the corresponding code snippet below.
Answer Table: A _____ B _____ C _____ D _____ E _____
Descriptions

A. This code computes an average
B. The following code computes the circumference of a circle
C. The following code computes the area of a circle
D. The following code converts from Fahrenheit to Celsius
E. The following code converts from Celsius to Fahrenheit

```
import java.util.Scanner;

  public static void main(String [] args)
  {
      // common declarations
      Scanner inputScanner = new Scanner(System.in);
      double temp1, temp2
      double r, result;
      int number1, number2, sum;

      // Code Snippet 1
      r = inputScanner.nextInt();
      result = Math.PI * Math.pow(r, 2);
      System.out.println("Answer = " + result );

      // Code Snippet 2
      temp1 = inputScanner.nextInt();
      temp2 = temp1 * 9/5 + 32;
      System.out.println("Answer = " + temp2 );

      // Code Snippet 3
      number1 = inputScanner.nextInt();
      number2 = inputScanner.nextInt();
      sum = number1 + number2;
      System.out.println("Answer = " + sum/2 );

      // Code Snippet 4
      temp1 = inputScanner.nextInt();
      temp2 = (temp1-32) * 5/9;
      System.out.println("Answer = " + temp2 );

      // Code Snippet 5
      r = inputScanner.nextInt();
      result = 2 * Math.PI * r;
      System.out.println("Answer = " + result );
  }
```

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Exercise 3: Arithmetic expressions

Write Java code for the following expressions. Declare all variables to be of type double. (For (c), you might find it useful to declare an intermediate variables such as `discriminate`.) The Java math library includes the method `Math.sqrt`. For example, "`double x = Math.sqrt(2)`" assigns `x` the square root of 2.

(a) The area of a right triangle (try to choose good variable names).

(b) The height of a baseball tossed strait up into the air at time t assuming an initial velocity of v. The equation for its position is $height = vt - \frac{1}{2}gt^2$, where t is time and g is the acceleration due to gravity.

(c) The roots of $ax^2 + bx + c$ as given by the quadratic formula $\frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$