(Lab 0) Problem Set 0:
Data in → Processing → Data out

P1 Solutions limited in scope to:		
● input/scanner ● output/print ● storage/variable	● arithmetic ● modulus ● logical	● relational ● equality ● casting

Submission Rules:

1. Submissions must be zipped into a **handin.zip** file. Each problem must be implemented in its own class file. Use the name of the problem as the class name.

2. You must use standard input and standard output for ALL your problems. It means that the input should be entered from the keyboard while the output will be displayed on the screen.

3. Your source code files should include a comment at the beginning including your name and that problem number/name.

4. The output of your solutions must be formatted exactly as the sample output to receive full credit for that submission.

5. Compile & test your solutions before submitting.

6. Each problem is worth up to 10 points total. The breakdown is as follows: 2 points for compiling, 3 points for correct output with sample inputs, 5 points for additional inputs.

7. This lab is worth a max total of: 40 points. You can complete as many problems as you like, but cannot receive more than 40 points towards the lab grade. All points in excess of that are for bragging rights. (Check the scoreboard to see how you did!)

8. Submission:
   ● You have unlimited submission attempts until the deadline passes
   ● You'll receive your lab grade immediately after submitting

Problem 1: AreaOfASquare (10 points)

Description.

Facts:

- Use a scanner for input.
- Store user input in variables.
- The area of a square would be length * length.
- For example, if the length of one side is 2 then the area would be 4 = 2*2.
- If the length of one side is 9 then the area would be 81 = 9*9.
- Use integers for variables.

Input

Your solution must take in one input. The input is to be treated as the square's side length.

Output

The output should be the total area of the square (length * length).

Sample Input	Sample output
10	100

Problem 2: MinutesToSeconds (10 points)

Description.

Facts:
- Use a scanner for input.
- Store user input in variables.
- There are 60 seconds in a minute.
- Use integers for variables.

Input

Your solution must take in one input. The input is to be treated as the number of minutes.

Output

The output should be the number of seconds.

Sample Input	Sample output
2	120

Problem 3: TablespoonsToTeaspoons (10 points)

Description.

Facts:
- Use a scanner for input.
- Store user input in variables.
- Use integers for variables.
- There are three teaspoons in one tablespoon.

Input

Your solution must take in one input. The input is to be treated as the number of tablespoons.

Output

The output should be the number of teaspoons.

Sample Input	Sample output
5	15

Problem 4: SimpleAddition (10 points)

Description.

Facts:
- Use a scanner for input.
- Store user input in variables.
- Use integers for variables.

Input

Your solution must take in two inputs. The first input is the first number to be added together and the second number would be the second number to be added together.

Output

The output should just be the total of the two numbers added together.

Sample Input	Sample output
15 22	37

Problem 5: AreaOfATriangle (10 points)

Description.

Facts:
- Use a scanner for input.
- Store user input in variables.
- Use doubles to store variables.
- Triangle area is 0.5*base*height.

Input

Your solution must take in two inputs. The first input is the base. The second input should be the height.

Output

The output should just be the total area of the triangle.

Sample Input	Sample output
3.0 5.0	7.5

Problem 6: SecondsToMinutes (10 points)

Description.

Facts:
- Use a scanner for input.
- Store user input in variables.
- Use doubles to store variables.
- There are 1 minute every 60 seconds.

Input

Your solution must take in one input as the number of seconds.

Output

The output should just be the total number of minutes that are included in the supplied seconds.

Sample Input	Sample output
12345	205.75

Problem 7: FahrenheitToCelsius (10 points)

Description.

Facts:
- Use a scanner for input.
- Store user input in variables.
- Use doubles to store variables.
- To convert from fahrenheit to celsius, we can say celsius = (fahrenheit - 32) * (5.0/9.0).

Input

Your solution must take in one input as the temperature in fahrenheit.

Output

The output should just be the temperature in celsius.

Sample Input	Sample output
77	25

Problem 8: PerimeterOfARectangle (10 points)

Description.

Facts:
- Use a scanner for input.
- Store user input in variables.
- Use doubles to store variables.
- Perimeter of a rectangle is = 2.0 * (length + width).

Input

Your solution must take in two inputs. The first input should be the length of the rectangle. The second input should be the width of the rectangle.

Output

The output should just be the perimeter of the rectangle.

Sample Input	Sample output
15 11	52