CS225 Homework 1
Area Calculator

DELIVERABLES: You will deliver one file as follows:

a. Your SurfaceAreaCalculator.java file, that meets the assignment requirements.

Only electronic documents submitted via Canvas are acceptable. Do not submit a hard copy of your assignment. Do not email your assignment to the course instructor or grader.

Important: Late assignments will not be graded.

PROBLEM DESCRIPTION: You are to compute the surface area of a package. Packages are defined by their length (l), height (h), and width (w).

Package parameters of interest are volume, surface area, and edge length, where:

a. Surface area SA, in square inches. SA = = $2 \cdot (l \cdot h + w \cdot h + l \cdot w)$.
b. Surface area in square centimeters, SASI = $2.54 \cdot 2.54 \cdot 2 \cdot (l \cdot h + w \cdot h + l \cdot w)$

SOFTWARE REQUIREMENTS:

R1. The software shall correctly compute the package surface area, SA.
R2. The software shall correctly compute the package surface area, SASI.
R3. The software shall accept user input for package l, w, and h. Units are in inches.
R4. The software shall display SA and SASI for the l, w, and h values entered by the user.
R5. The software shall display SA and SASI for the three test cases provided below.

TEST CASES: Test cases are given in Table 1 for requirements R1 and R2. Note: You do not need to fill out the "Actual Output" cells in the table. They are provided for reference only.

Table 1: Test Cases

Test Cases	Input Parameters	Expected Output		Actual Output	
		R1	R2	R1	R2
1	length = height = width = 0.0	0.0	0.0		
2	length = 15.0, height = 10.0, width = 0.0	300.0	1935.48		
3	length = 10.0, height = width = 1.0	42.0	270.97		

Note: For this assignment, the requirements and test cases have been provided to you. In future assignments you may be required to create your own requirements and test cases.

INSTRUCTIONS: Create a Java file, SurfaceAreaCalculator.java, to meet requirements R1 through R5, and submit via Canvas upload utility.

QUESTIONS: There are no additional questions for this assignment.

RUBRIC: Points will be earned per the grading rubric shown in Table 2.

Table 2: Grading Rubric

Deliverable	Points	Awarded
Initial Comment Block in Source Code	4	
Code compilation	4	
Correct code outputs using console input (R4)	6	
Correct Test Case Results (2 pts per test case) (R5)	6	
Totals	20	