

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 1
<b>Problem</b>				<p>Problem Description:</p> <p>Selvan was playing with the a object of random size for stress relief.</p> <p>Selvan knows that the Length, Width, and Height of the object.</p> <p>But he would like to know the surface area of the object he is playing with. Can you help him in finding it?</p> <p>Functional Description:</p> <p>Surface area of the Object = <math>2 \times [\text{width} \times \text{length} + \text{length} \times \text{height} + \text{height} \times \text{width}]</math></p> <p>Constraints:</p> <p><math>1 \leq \text{length} \leq 20</math></p> <p><math>1 \leq \text{width} \leq 20</math></p> <p><math>1 \leq \text{height} \leq 20</math></p> <p>Input Format:</p> <p>First Line : Length of the object in Integer.</p> <p>Second Line : Width of the object in Integer</p> <p>Third Line : Height of the object in Integer</p> <p>Output Format:</p> <p>Print a single integer value representing the surface area of the object selvam is playing with.</p>		

✓ Logical Test Cases

Test Case 1
INPUT (STDIN)
3 2 3
EXPECTED OUTPUT
42

Test Case 2
INPUT (STDIN)
3 7 4
EXPECTED OUTPUT
122

✓ Mandatory Test Cases

Test Case 1
KEYWORD
int length,width,height,surfacearea; a;

Test Case 2
KEYWORD  printf

Test Case 3
KEYWORD  scanf

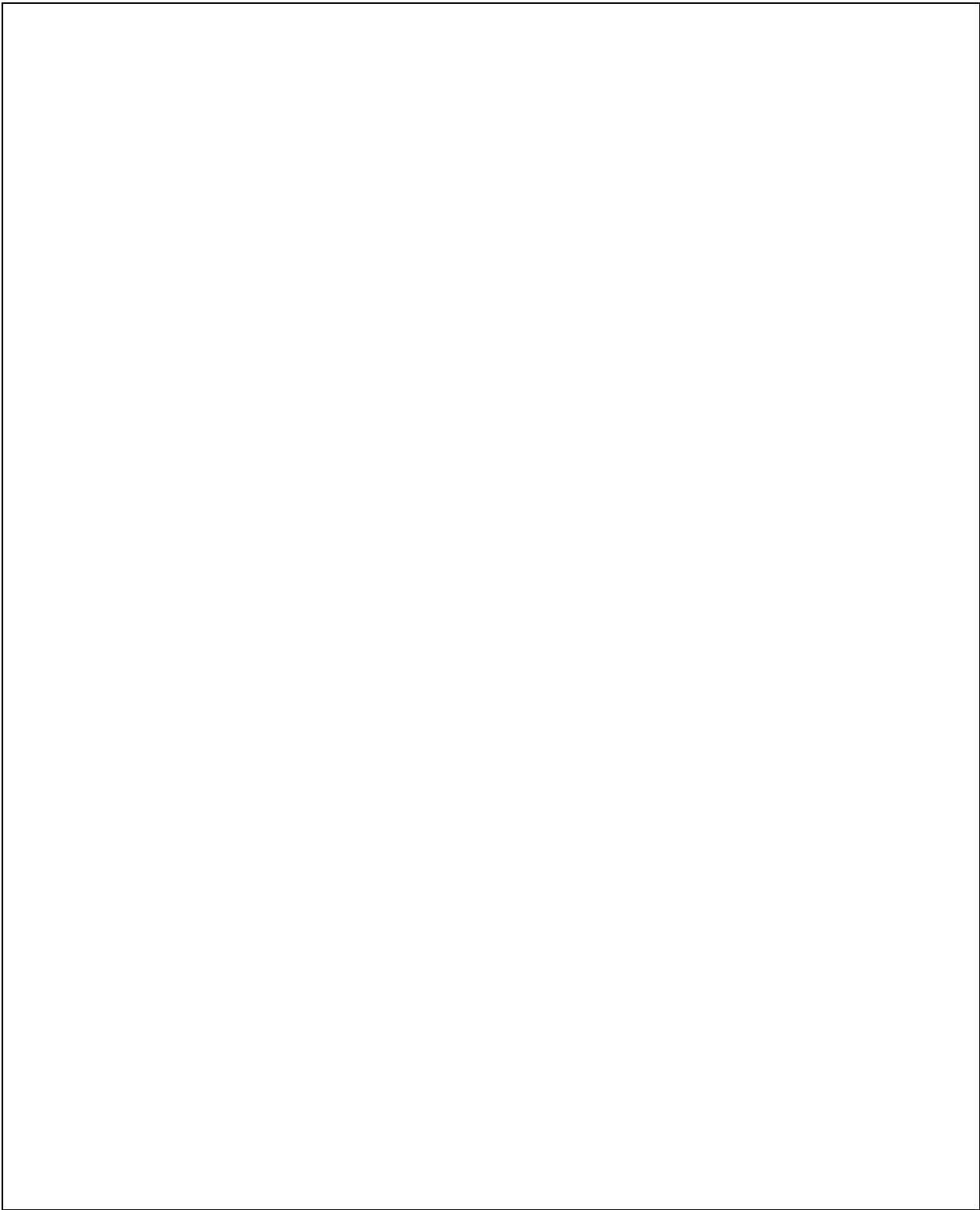
✓ Complexity Test Cases

Test Case 1
CYCLOMATIC COMPLEXITY
1

Test Case 2
TOKEN COUNT
70

Test Case 3
NLOC
10

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 2
<b>Problem</b> <p>Problem Description:</p> <p>During the IPL Match between CSK and MI, as a part of IPL contest the question was asked to the fans.</p> <p>Who are all giving the correct answer to that question will get the free VIP box ticket for the Final for which CSK have already qualified .</p> <p>The question is convert given integer number to octal and hexadecimal number respectively.</p> <p>Abilash is an die heart CSK fan. Can you help him answer the question so that he can watch CSK play the final from VIP box?</p> <p>Constraints:</p> <p><math>1 \leq \text{iplno} \leq 10000</math></p> <p>Input Format:</p> <p>Only line of input has single integer number that need to be converted.</p> <p>Output Format:</p> <p>In the First line of output print the octal number equivalent to the input value.</p> <p>In the Second line of output print the hexadecimal number equivalent to the input value.</p>	C	Session	Input & Output	Question Information	Level 1	Challenge 2

✓ Logical Test Cases

Test Case 1
INPUT (STDIN)
1953
EXPECTED OUTPUT
3641 7a1

Test Case 2
INPUT (STDIN)
8751
EXPECTED OUTPUT
21057 222f

✓ Mandatory Test Cases

Test Case 1
KEYWORD
int iplno;

Test Case 2
KEYWORD
scanf

Test Case 3
KEYWORD
printf

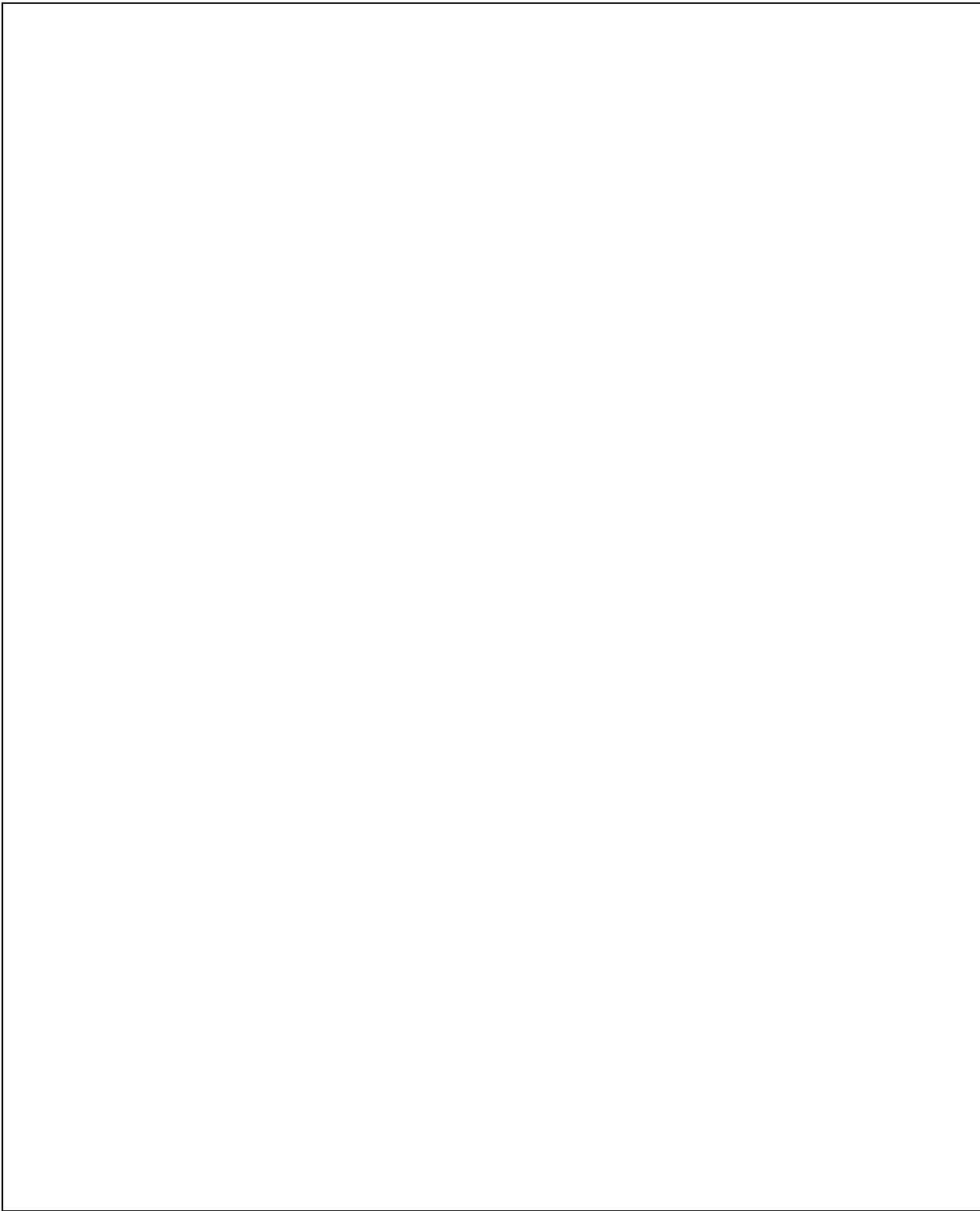
✓ Complexity Test Cases

Test Case 1
CYCLOMATIC COMPLEXITY
1

Test Case 2
TOKEN COUNT
45

Test Case 3
NLOC
9

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 3
Problem				<p>Problem Description:</p> <p>Arif came from a very low income family.</p> <p>However, his father Irfan, sent him abroad for the purpose of studying.</p> <p>Arif also concentrated well in his learning keeping in mind his father's poverty.</p> <p>Arif was excellent in mathematics.</p> <p>One day Arif had a computer class and his computer teacher asked him to create a programming logic for the mathematics problem of multiplying two numbers of type float.</p> <p>Constraints:</p> <p><math>1.00 \leq \text{var1} \leq 1000.00</math></p> <p><math>1.00 \leq \text{var2} \leq 1000.00</math></p> <p>Input Format:</p> <p>The only line of input has two floating point numbers separated by space</p> <p>Output Format:</p> <p>In the only line of output print the result of the multiplication with 4 values after decimal point.</p>		

✓ Logical Test Cases

Test Case 1	Test Case 2
INPUT (STDIN)	INPUT (STDIN)
467.78 762.89	945.16 187.49
EXPECTED OUTPUT	EXPECTED OUTPUT
356864.6875	177208.0469

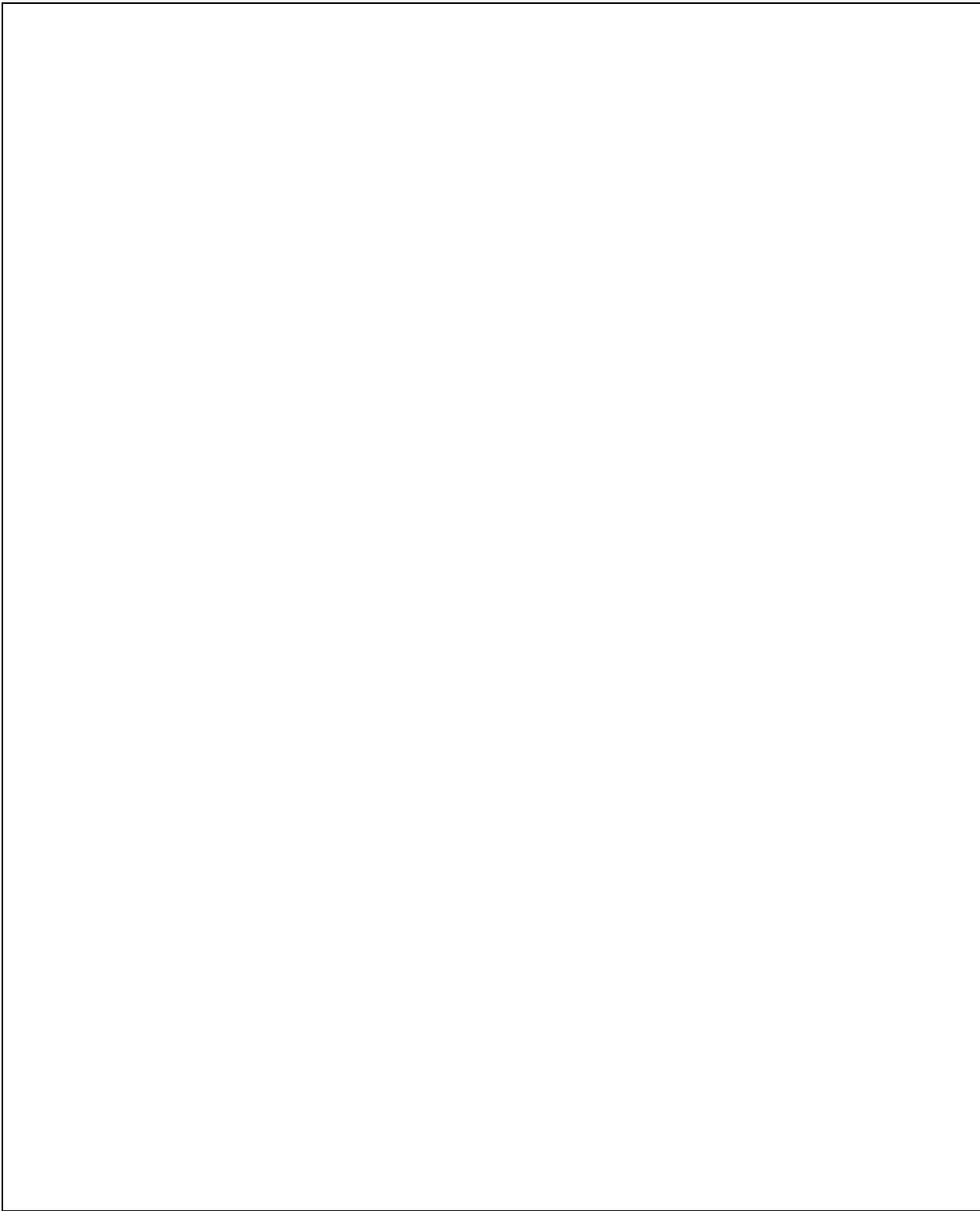
✓ Mandatory Test Cases

Test Case 1	Test Case 2	Test Case 3
KEYWORD	KEYWORD	KEYWORD
printf	scanf	float val1,val2,outcome;

✓ Complexity Test Cases

Test Case 1	Test Case 2	Test Case 3
CYCLOMATIC COMPLEXITY	TOKEN COUNT	NLOC
1	61	11

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 4
				<p>Problem Description:</p> <p>Elavenil runs a popular bakery in his native. Elavenil has now finished baking and frosting his cupcakes, it's time to package them. Elavenil has <math>N</math> cupcakes, and needs to decide how many cupcakes to place in each package.</p> <p>Each package must contain the same number of cupcakes. Elavenil will choose an integer <math>A</math> between 1 and <math>N</math>, inclusive, and place exactly <math>A</math> cupcakes into each package.</p> <p>Elavenil makes as many packages as possible. Elavenil then gets to eat the remaining cupcakes. Elavenil enjoys eating cupcakes very much. Help Elavenil choose the package size <math>A</math> that will let him eat as many cupcakes as possible.</p>		
Problem				<p>Constraints:</p> <p><math>2 \leq N \leq 10000</math></p> <p>Input Format:</p> <p>Only line of input consists of a single integer <math>N</math> representing the number of cupcakes.</p> <p>Output Format:</p> <p>Print the package size that will maximize the number of leftover cupcakes.</p> <p>If multiple package sizes will result in the same number of leftover cupcakes, print the largest such size.</p>		

✓ Logical Test Cases

Test Case 1	Test Case 2
INPUT (STDIN)	INPUT (STDIN)
7643	3895
EXPECTED OUTPUT	EXPECTED OUTPUT
3822	1948

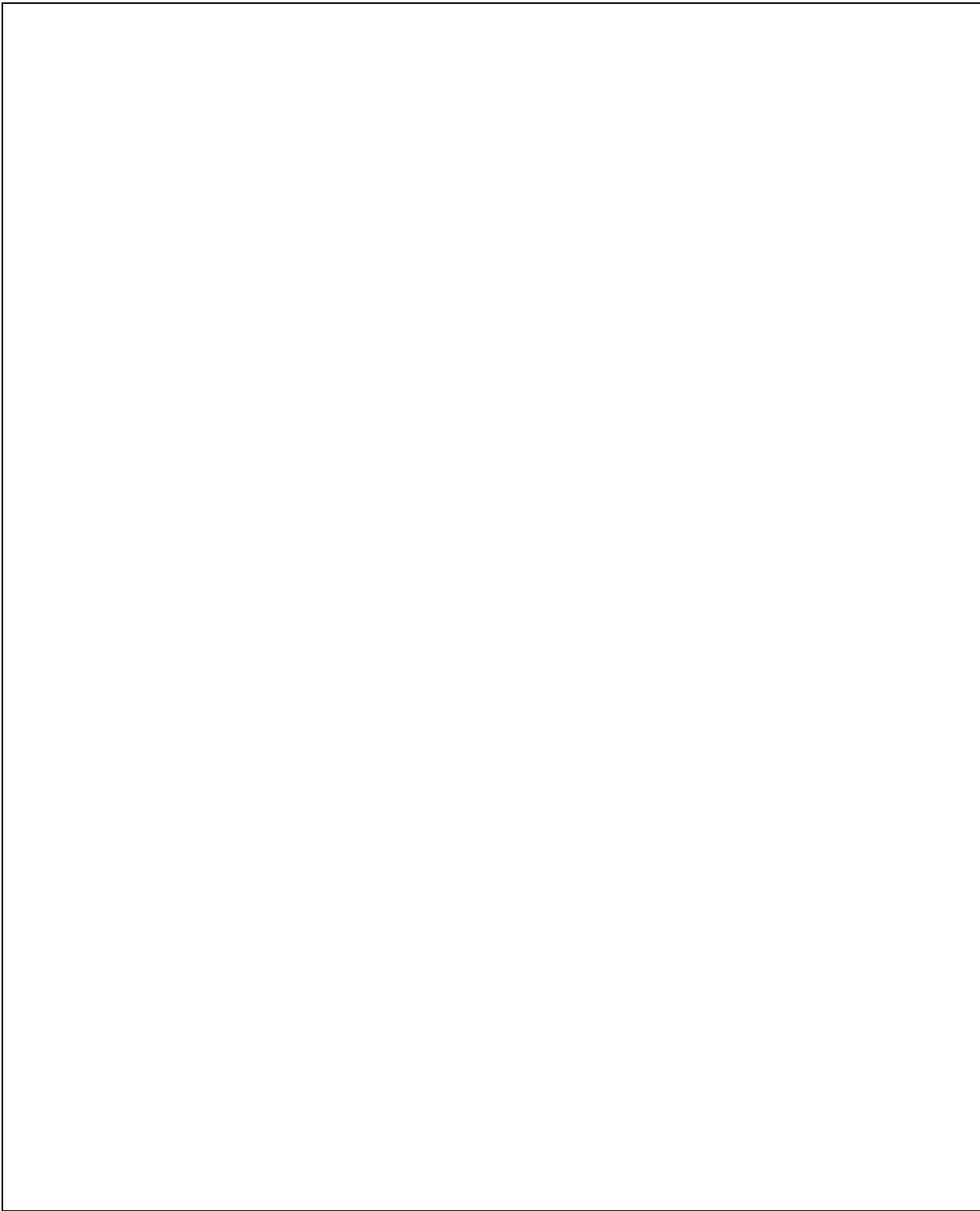
✓ Mandatory Test Cases

Test Case 1	Test Case 2	Test Case 3
KEYWORD	KEYWORD	KEYWORD
int n;	scanf	printf

✓ Complexity Test Cases

Test Case 1	Test Case 2	Test Case 3
CYCLOMATIC COMPLEXITY	TOKEN COUNT	NLOC
1	40	8

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 5
Problem	Problem Description:  The Electricity Officer has mentioned the total counts of unit and amount. The officer inform the customer the bill amount in a unique format.  The format given by electricity officer as follow:  But customers are finding the difficult to find the exact amount that needs to be paid.  Can you help the customers?  Functional Description:  Total Bill Amount = unitconsumed ^ costperunit  Constraints:  $1 \leq \text{unitconsumed} \leq 500$  $2 \leq \text{costperunit} \leq 10$  Input Format :  The first line of input represents the integer value of unitconsumed The second line of input represents the integer value of costperunit  Output Format:  Print the total Bill amount in single line.					

✓ Logical Test Cases

Test Case 1	Test Case 2
INPUT (STDIN)	INPUT (STDIN)
23 3	19 5
EXPECTED OUTPUT	EXPECTED OUTPUT
12167	2476099

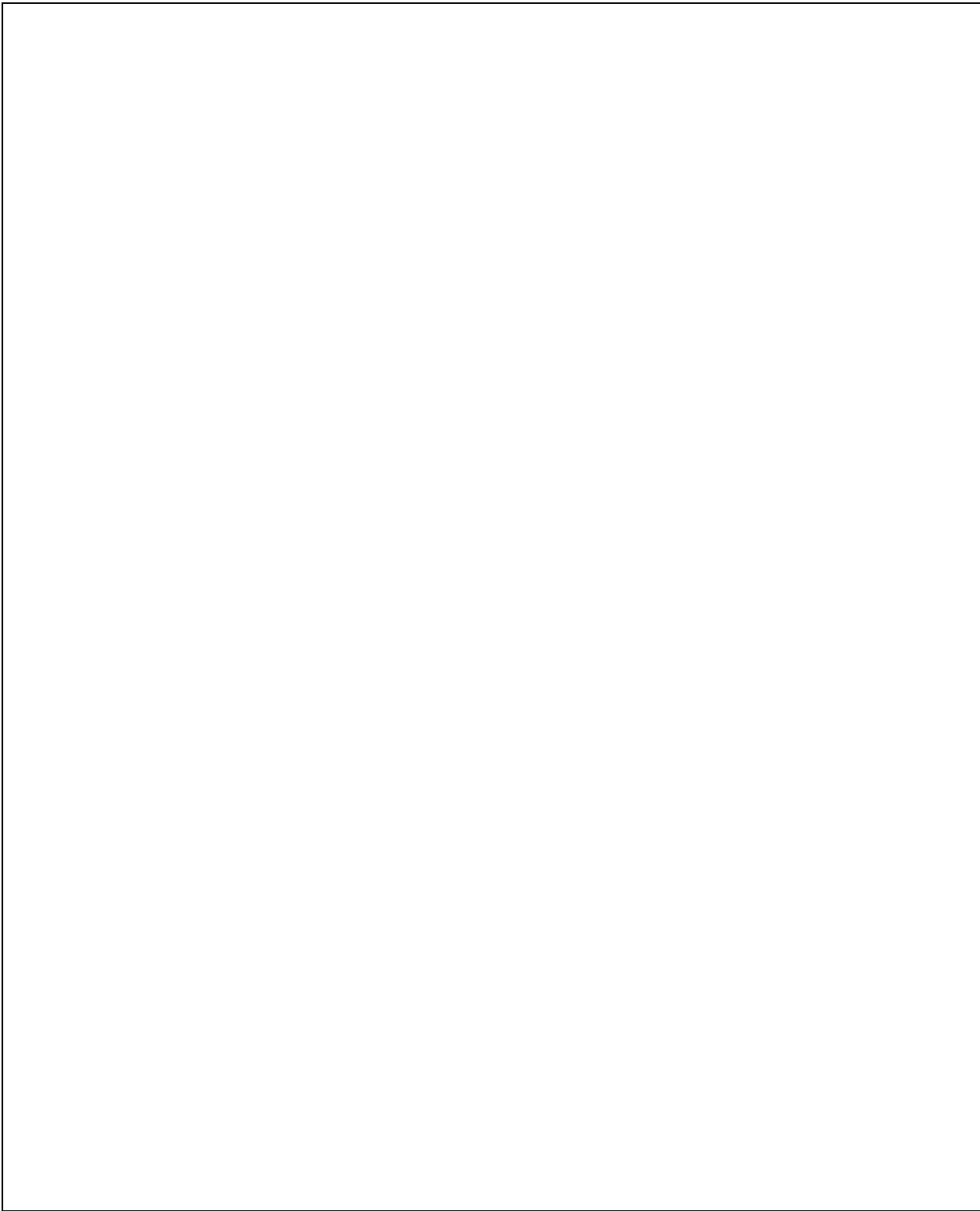
✓ Mandatory Test Cases

Test Case 1	Test Case 2	Test Case 3
KEYWORD	KEYWORD	KEYWORD
unitconsumed	costperunit	scanf
Test Case 4		
KEYWORD		
printf		

✓ Complexity Test Cases

Test Case 1	Test Case 2	Test Case 3
CYCLOMATIC COMPLEXITY	TOKEN COUNT	NLOC
1	70	15

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 6
				<p>Problem Description:</p> <p>On one beautiful Sunday Selvan went to Aaron's house for exam preparation.</p> <p>They have decided to study Mathematics subject because they have exams by coming Monday, Aaron is a master in Mathematics but Selvan is not so good in Mathematics so James trained with Selvan for getting a high score in the exam.</p> <p>After teaching some problems to Selvan.Aaron have given some tasks to Selvan to solve .</p> <p>The problem is to convert input float into a double. Can you help Selvan in finding the solution ?</p>		
Problem				<p>Constraints:</p> <p><math>1.00 \leq \text{num1} \leq 100.00</math></p> <p><math>1.00 \leq \text{num2} \leq 100.00</math></p> <p><math>1.00 \leq \text{resnum1} \leq 100.00</math></p> <p><math>1.00 \leq \text{resnum2} \leq 100.00</math></p> <p>Input Format:</p> <p>The first and second line of the input represents two different input value of type float.</p> <p>Output Format:</p> <p>The first and second line of the output represents outputs of first and second line of input of type double.</p>		

✓ Logical Test Cases

Test Case 1	Test Case 2
INPUT (STDIN)	INPUT (STDIN)
3.23 5.67	48.18 17.77
EXPECTED OUTPUT	EXPECTED OUTPUT
3.230000 5.670000	48.180000 17.770000

✓ Mandatory Test Cases

Test Case 1	Test Case 2
KEYWORD	KEYWORD

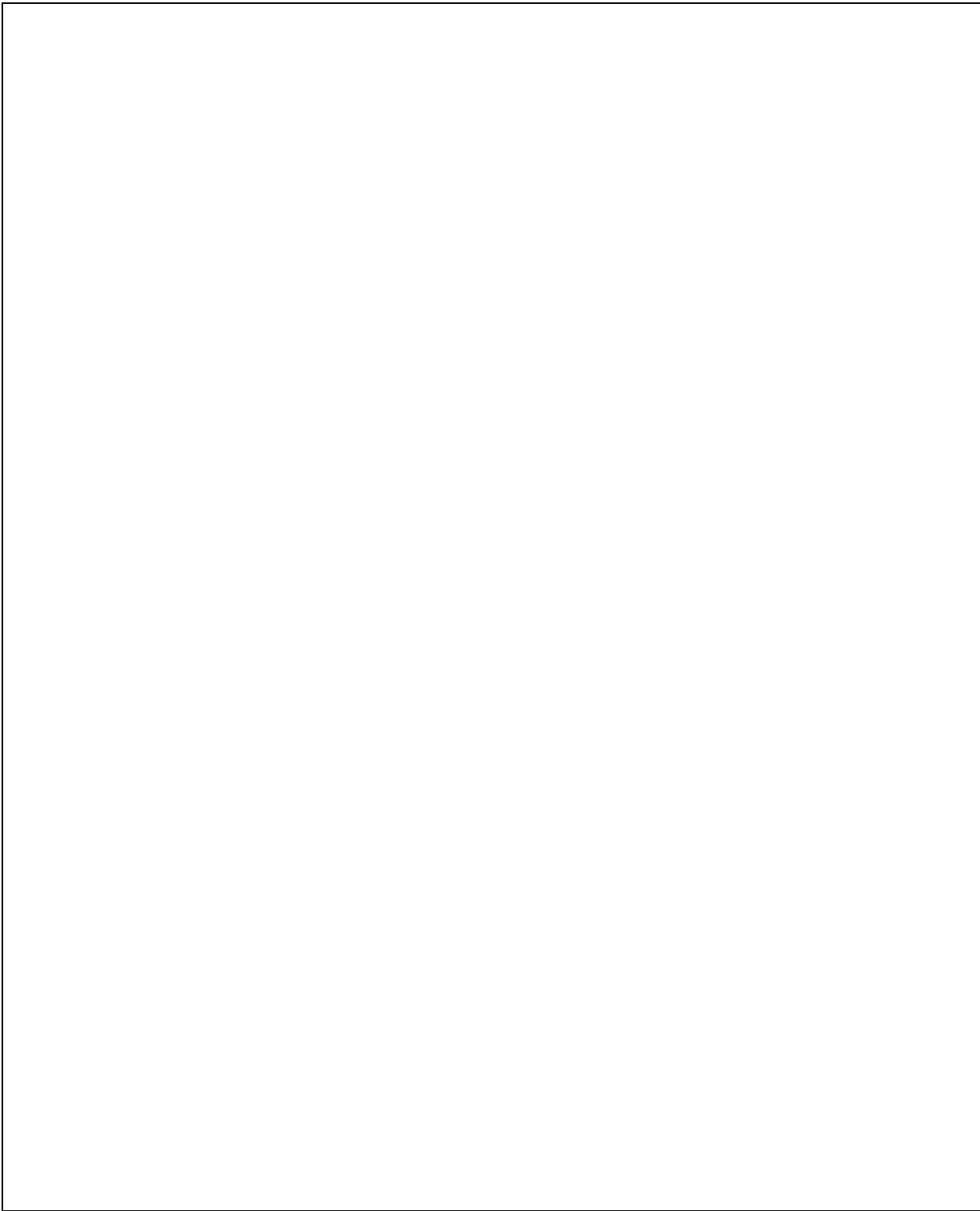
float num1,num2;

double resnum1,resnum2;

✓ Complexity Test Cases

Test Case 1	Test Case 2	Test Case 3
CYCLOMATIC COMPLEXITY	TOKEN COUNT	NLOC
1	80	15

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 7
<b>Problem</b>	<p>Problem Description:</p> <p>Nancy bought apples from the fruit shop.</p> <p>The shopkeeper specified the bill amount. Nancy also gave some amount to the shopkeeper for paying the bill.</p> <p>But she likes to know the quotient and remainder after dividing the amount given by her by the bill amount specified by the shopkeeper.</p> <p>Can you help nancy in finding it?</p> <p>Constraint :</p> <p><math>5 \leq \text{amtgiven} \leq 2500</math></p> <p><math>5 \leq \text{billamt} \leq 2500</math></p> <p><b>Input Format:</b></p> <p>First Line: Integer value of amtgiven representing the amount given by nancy.</p> <p>Second Line: Integer value of billamt representing the amount specified by the shop keeper</p> <p><b>Output Format</b></p> <p>First Line: Print the Quotient in integer format.</p> <p>Second Line: Print the Remainder in integer format.</p>					

✓ Logical Test Cases

Test Case 1

INPUT (STDIN)

600  
520

EXPECTED OUTPUT

Quotient:1  
Remainder:80

Test Case 2

INPUT (STDIN)

789  
256

EXPECTED OUTPUT

Quotient:3  
Remainder:21

✓ Mandatory Test Cases

Test Cases

Test Case 1

KEYWORD

int billamt,amtgiven;

Test Case 2

KEYWORD

scanf

Test Case 3

KEYWORD

printf

✓ Complexity Test Cases

Test Case 1

CYCLOMATIC COMPLEXITY

1

Test Case 2

TOKEN COUNT

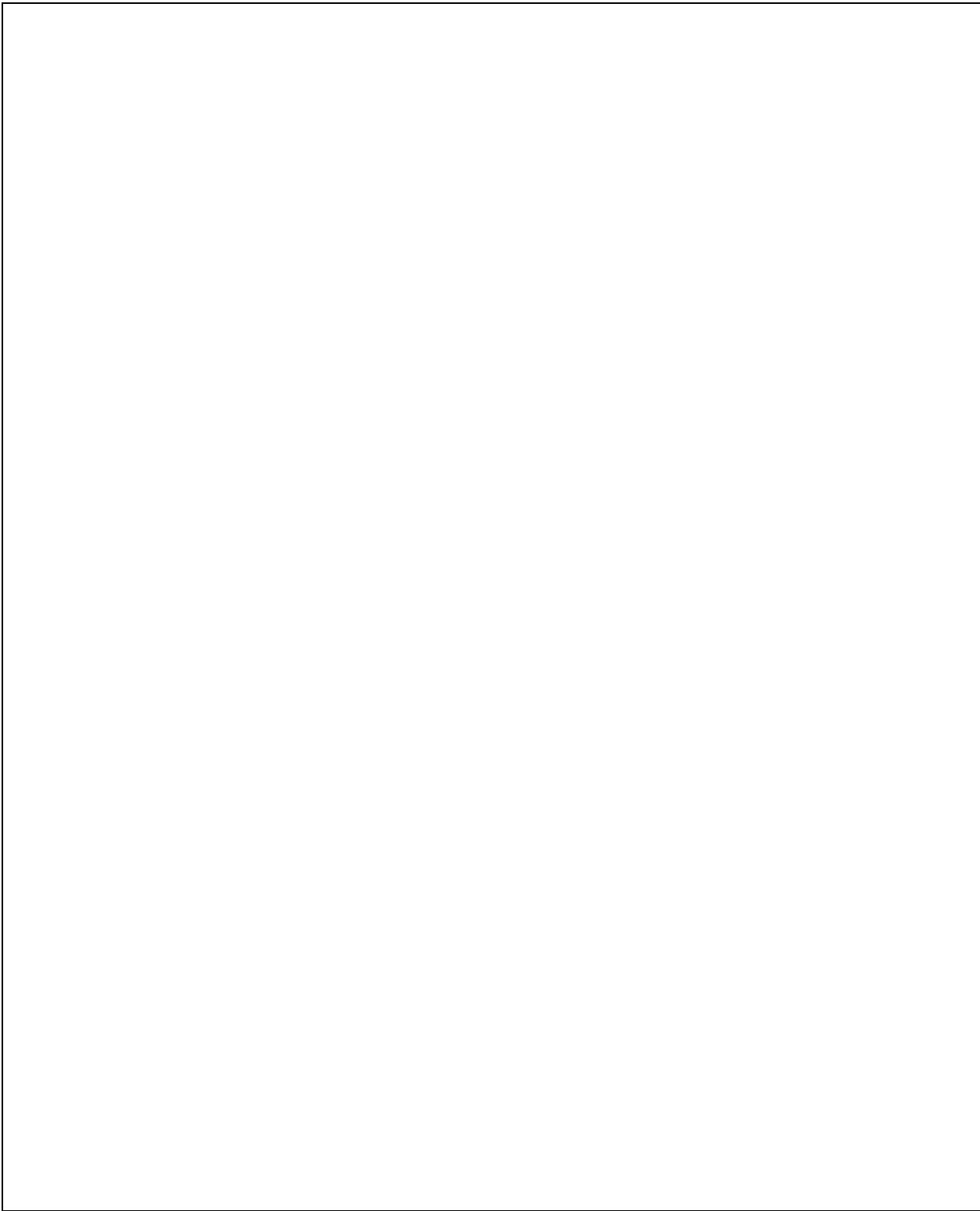
75

Test Case 3

NLOC

15

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 8
Problem	<p>Problem Description:</p> <p>Professor JD has lots of options. Bottles containing all types of potions are stacked on shelves which cover the entire wall from floor to ceiling.</p> <p>Professor JD has broken his bones several times while climbing the top shelf for retrieving a potion. He decided to get a ladder for him.</p> <p>But he has no time to visit Charu. So he instructed Bargav to make a ladder for him. Professor JD specifically wants a step ladder that looks like an inverted 'V' from a side view.</p> <p>Professor just mentioned two things before vanishing-</p> <p>B - separation between left side (LS) and right side (RS) on the ground</p> <p>LS - the length of left side</p> <p>What should be the length of RS? At one extreme LS can be vertical and at other RS can be vertical.</p> <p>Bargav is angry and confused.</p> <p>Can you help him find the minimum and maximum length of RS.</p> <p>Constraints</p> <p><math>1 \leq B &lt; LS \leq 100</math></p> <p><b>Input Format:</b></p> <p>Only line of input contains 2 integers representing B and LS respectively.</p> <p><b>Output Format:</b></p>					

## Test Cases

### Logical Test Cases

Test Case 1
INPUT (STDIN)
17 21
EXPECTED OUTPUT
12.32883 27.01851

Test Case 2
INPUT (STDIN)
32 49
EXPECTED OUTPUT
37.10795 58.52350

### Mandatory Test Cases

Test Case 1
KEYWORD
float b,ls,rs1,rs2;

Test Case 2
KEYWORD
scanf

Test Case 3
KEYWORD
printf

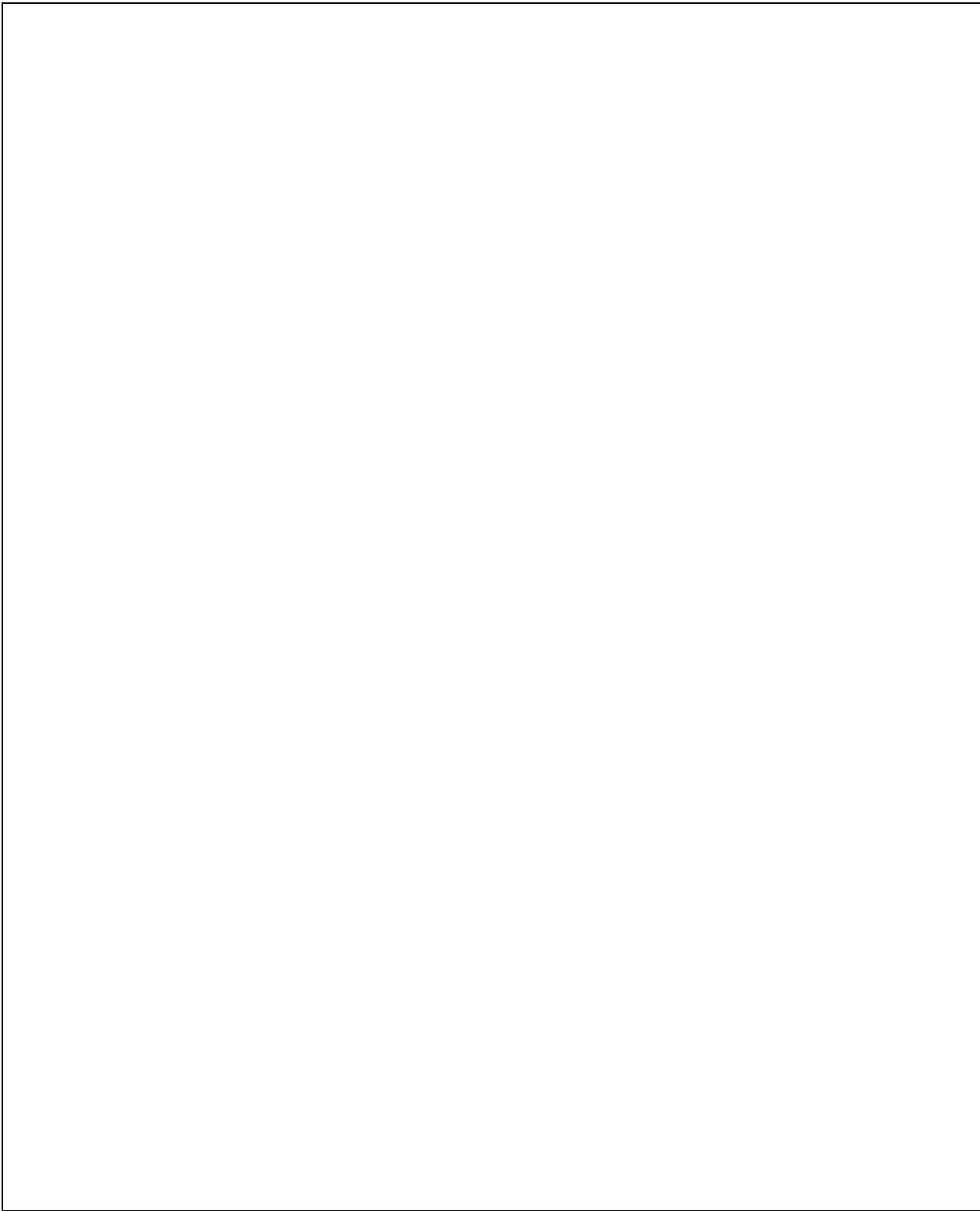
### Complexity Test Cases

Test Case 1
CYCLOMATIC COMPLEXITY
1

Test Case 2
TOKEN COUNT
80

Test Case 3
NLOC
11

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 9
Problem	<p>Problem description:</p> <p>Nathan works as an HR in a private company. He had an opportunity to interview students from various disciplines.</p> <p>He asked the candidates to perform the addition of two floating point numbers given by him and to print the output with three values after decimal point. But the student failed a math test on adding two numbers. So many students could not complete the first round.</p> <p>One day Nathan is invited as a chief placement trainer in a reputed engineering college. He is willing to know how many students are capable of solving the same problem.</p> <p>Can you solve the problem and prove him that you are capable of solving it?</p> <p>Constraints:</p> <p><math>1.00 \leq \text{var1} \leq 25000.00</math></p> <p><math>1 \leq \text{var2} \leq 25000.00</math></p> <p>Input Format:</p> <p>The only line of input has two input values of type float separated by a space.</p> <p>Output Format:</p> <p>In the only line of output print the sum of two numbers with three values after decimal point</p>					

## Test Cases

### ✓ Logical Test Cases

Test Case 1
INPUT (STDIN)
19845.67 12985.59
EXPECTED OUTPUT
32831.258

Test Case 2
INPUT (STDIN)
23985.12 6545.51
EXPECTED OUTPUT
30530.629

### ✓ Mandatory Test Cases

Test Case 1
KEYWORD
printf

Test Case 2
KEYWORD
scanf

Test Case 3
KEYWORD
float var1,var2,res;

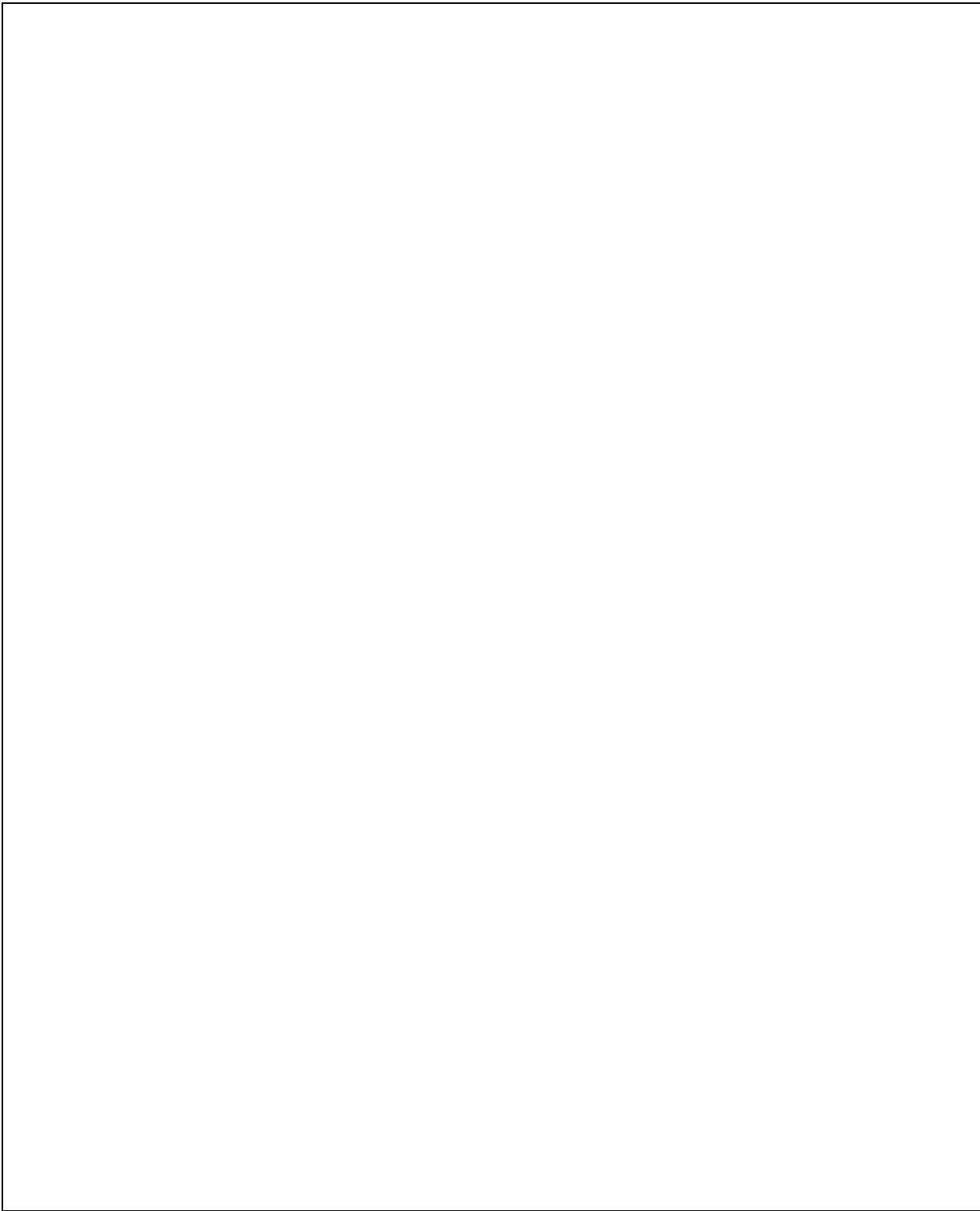
### ✓ Complexity Test Cases

Test Case 1
CYCLOMATIC COMPLEXITY
1

Test Case 2
TOKEN COUNT
65

Test Case 3
NLOC
11

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**

Course	C	Session	Input & Output	Question Information	Level 1	Challenge 10
<p>Problem Description:</p> <p>Sajid was booking a train ticket from Chennai to Delhi for his family. Two of the relatives was interested in joining that journey from different places with their family members So, Sajid booked tickets for those persons also along with his family members.</p> <p>He wants to know the total number of tickets for this travel.</p> <p>Can you help him in finding the total number of passengers?</p> <p>Constraint:</p> <p>Sajid has to declare three integer variables named as num1, num2, num3.</p> <p><b>Problem</b></p> <p><math>1 \leq \text{num1} \leq 15</math></p> <p><math>1 \leq \text{num2} \leq 15</math></p> <p><math>1 \leq \text{num3} \leq 15</math></p> <p><b>Input Format:</b></p> <p>Only Line of input has three integers num1,num2 and num3 separated by a space representing the numbers of ticket booked by Sajid at three different interval of time.</p> <p><b>Output Format:</b></p> <p>Print the total number of tickets booked by Sajid.</p>						

#### Test Cases

- Logical Test Cases

Test Case 1
INPUT (STDIN)
5 10 15
EXPECTED OUTPUT

Test Case 2
INPUT (STDIN)
3 5 6
EXPECTED OUTPUT

- Mandatory Test Cases

Test Case 1
KEYWORD
int num1,num2,num3;

Test Case 2
KEYWORD
int sum;

Test Case 3
KEYWORD
printf

Test Case 4
KEYWORD
scanf

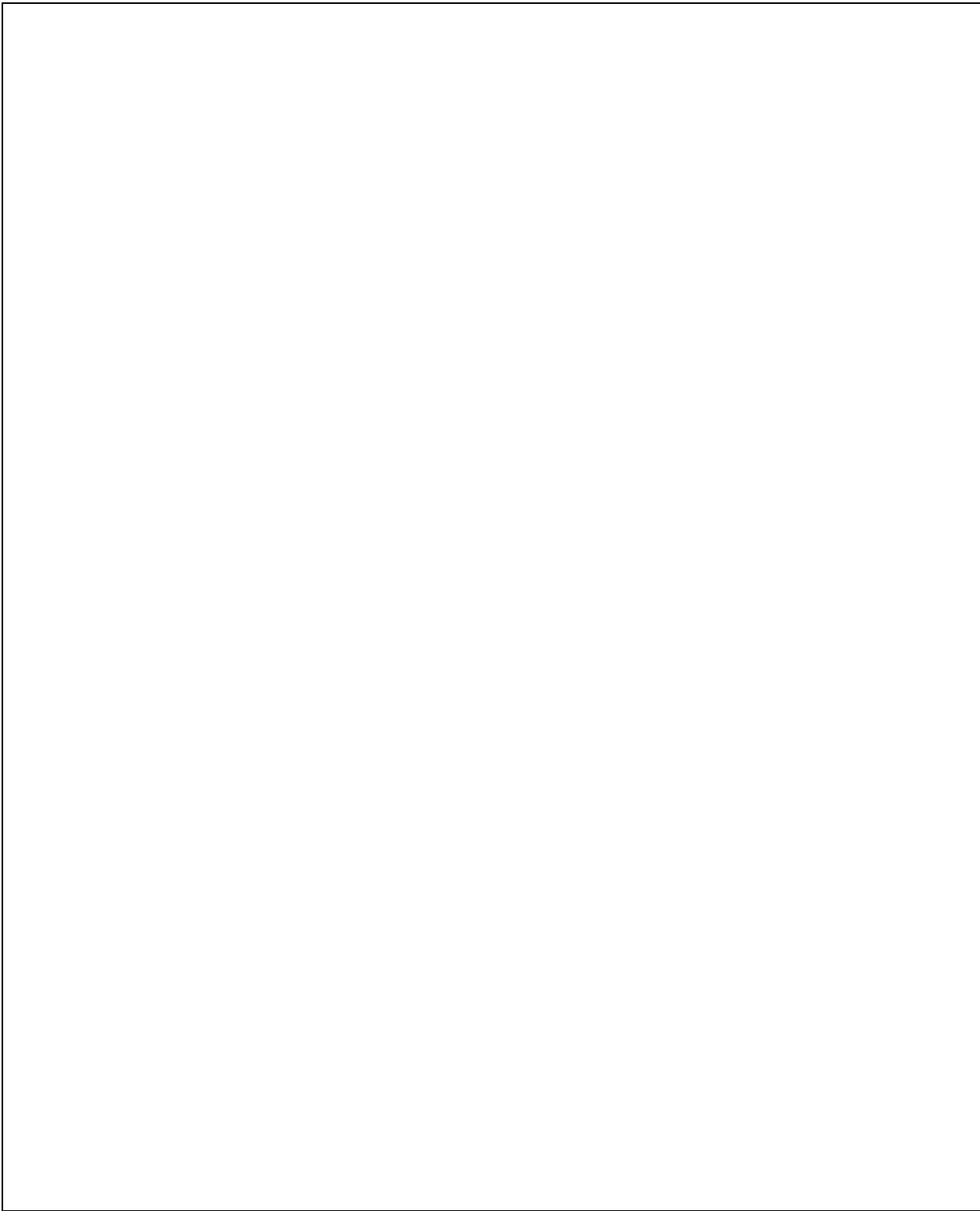
- Complexity Test Cases

Test Case 1
CYCLOMATIC COMPLEXITY
1

Test Case 2
TOKEN COUNT
70

Test Case 3
NLOC
15

**Code Editor: C/Java/C++**



Output:

Criteria	Max Marks	Obtained Marks
Correctness of Algorithms	20	
Time and Space complexity	5	
Use of Appropriate Data Structure	5	
Code Readability and Style	10	
Test case Handling	10	
Total Marks	50	

**Signature with Date**