

## GE23131-Programming Using C-2024

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Question **1**  
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question

Status	Finished
Started	Monday, 13 January 2025, 8:58 AM
Completed	Monday, 13 January 2025, 9:29 AM
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You are transporting some boxes through a tunnel, where each box is a parallelepiped, and is  $length_i$  wide and  $height_i$  tall.

The height of the tunnel is **41** feet and the width can be assumed to be infinite. A box can be carried only if its height is strictly less than the tunnel's height. Find the volume of each box that can be carried to the other end of the tunnel. Note: Boxes cannot be rotated.

## Input Format

The first line contains a single integer  $n$ , denoting the number of boxes.

$n$  lines follow with three integers on each separated by single spaces -  $length_i$ ,  $width_i$  and  $height_i$  denoting the length, width and height in feet of the  $i$ -th box.

## Constraints

$$1 \leq n \leq 100$$

$$1 \leq length_i, width_i, height_i \leq 100$$

## Output Format

For every box from the input which has a height lesser than **41** feet, print its volume in a separate line.

## Sample Input 0

```
4
5 5 5
1 2 40
10 5 41
7 2 42
```

## Sample Output 0

```
125
80
```

## Explanation 0

The first box is really low, only **5** feet tall, so it can pass through the tunnel and its volume is **125**.

The second box is sufficiently low, its volume is **1 x 2 x 4 = 80**.

The third box is exactly **41** feet tall, so it cannot pass. The same can be said about the fourth box.

**Answer:** (penalty regime: 0 %)

	Input	Expected	Got	
	4	125	125	
	5 5 5	80	80	
	1 2 40			
	10 5 41			
	7 2 42			

Passed all tests!

Question 2

Correct

☐ Flag question

You are given  $n$  triangles, specifically, their sides  $a_i$ ,  $b_i$  and  $c_i$ . Print them in the same style but the smallest one to the largest one. It is guaranteed that all the areas are different.

The best way to calculate a volume of the triangle with sides  $a$ ,  $b$  and  $c$  is Heron's formula:

$S = \sqrt{p * (p - a) * (p - b) * (p - c)}$  where  $p = (a + b + c) / 2$ .

Input Format

First line of each test file contains a single integer  $n$ .  $n$  lines follow with  $a_i$ ,  $b_i$  and  $c_i$  on each s

Constraints

$1 \leq n \leq 100$   
 $1 \leq a_i, b_i, c_i \leq 70$   
 $a_i + b_i > c_i, a_i + c_i > b_i$  and  $b_i + c_i > a_i$

Output Format

Print exactly  $n$  lines. On each line print 3 integers separated by single spaces, which are  $a_i$ ,  $b_i$  triangle.

Sample Input 0

3  
7 24 25  
5 12 13  
3 4 5

Sample Output 0

3 4 5  
5 12 13  
7 24 25

The square of the first triangle is **84**. The square of the second triangle is **30**. The square of the sorted order is the reverse one.

**Answer:** (penalty regime: 0 %)

	Input	Expected	Got	
	3	3 4 5	3 4 5	
	7 24 25	5 12 13	5 12 13	
	5 12 13	7 24 25	7 24 25	
	3 4 5			

Passed all tests!

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