GE23131-Programming Using C-2024

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Started	Tuesday, 14 January 2025, 8:34 PM
Completed	Tuesday, 14 January 2025, 8:48 PM
Duration	13 mins 42 secs

Question **1**

Correct

Flag question

You are transporting some boxes through a tunnel, where each box is a parallelepiped,

The height of the tunnel ***41*** feet and the width can be assumed to be infinite. A box can less than the tunnel's height. Find the volume of each box that can be successfully transp 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 - $length_i$ $width_i$ a the ***i***-th box.

Constraints

$1 \le n \le 100$

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

Output Format

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

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 volun

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 fo

Answer: (penalty regime: 0 %)

```
#include <stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    for(int i=0;i<n;i++){
        int lenght,width,height;
        scanf("%d %d %d",&lenght,&width,&height);
        if(height<41){
            int volume=lenght*width*height;
            printf("%d\n",volume);
        }
    }
}
```

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

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 styl 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 formu

$S = \sqrt{p * (p - a) * (p - b) * (p - c)}$ 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 e

Constraints

$1 \le n \le 100$

$1 \le a_i, b_i, c_i \le 70$

$a_i + b_i > c_i, a_i + c_i > b_i$ 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

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

Explanation 0

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reverse one.

Answer: (penalty regime: 0 %)

```
#include <stdio.h>
#include <math.h>
#include <stdlib.h>
typedef struct{
    double area;
    int a,b,c;
}Triangle;
double calculate_area(int a,int b,int c){
    double p=(a+b+c)/2.0;
    return sqrt(p*(p*a)*(p*b)*(p*c));
}
int compare(const void*x,const void*y){
    Triangle*t1=(Triangle *)x;
    Triangle*t2=(Triangle *)y;
    if (t1->area<t2->area) return -1;
    if(t1->area>t2->area) return 1;
    return 0;
}
int main(){
    int n;
    scanf("%d",&n);
    Triangle triangles[n];
    for(int i=0;i<n;i++){
        int a,b,c;
        scanf("%d %d %d",&a,&b,&c);
        triangles[i].a=a;
        triangles[i].b=b;
        triangles[i].c=c;
        triangles[i].area=calculate_area(a,b,c);

}qsort(triangles,n,sizeof(Triangle),compare);
    for(int i=0;i<n;i++){
        printf("%d %d
%d\n",triangles[i].a,triangles[i].b,triangles[i].c
);
    }
    return 0;
}
```

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

Passed all tests!

Save the state of the flags