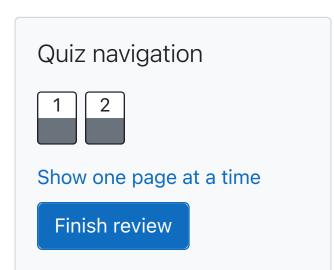
GE23131-Programming Using C-2024



Question 1 Correct

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Status Finished Started Monday, 13 January 2025, 7:52 AM Completed Monday, 13 January 2025, 8:28 AM **Duration** 36 mins 20 secs

> You are transporting some boxes through a tunnel, where each box is a parallelepiped, and is characterized by its length, width and height.

The height of the tunnel 41 feet and the width can be assumed to be infinite. A box can be carried through the tunnel only if its height is strictly less than the tunnel's height. Find the volume of each box that can be successfully transported 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; and height; which are length, width and height in feet of the i-th box.

Constraints

 $1 \le n \le 100$

 $1 \le length_i$, width_i, height_i ≤ 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

10 5 41

Sample Output 0

125

80

4

555

1240

7 2 42

Explanation 0

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

The second box is sufficiently low, its volume is $1 \times 2 \times 4 = 80$.

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 %) 1 #include<stdio.h>

```
2 v int main(){
        int n,i;
        int length, width, height;
        scanf("%d",&n);
        for(i=0;i<n;i++){</pre>
             scanf("%d %d %d",&length,&width,&height);
             if(height<41){</pre>
 8
                 printf("%d\n",length*width*height);
10
11
12
        return 0;
13
```

~
1 10 7

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 sorted by their areas from 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:

 $S = \ddot{O} p * (p - a) * (p - b) * (p - c)$ 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 separated by single spaces.

Constraints

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

 $1 \le n \le 100$

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

Output Format

which are a_i , b_i and c_i of the corresponding triangle.

Print exactly n lines. On each line print 3 integers separated by single spaces,

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

The square of the third triangle is **6**. So the sorted order is the reverse one.

The square of the first triangle is **84**. The square of the second triangle is **30**.

1 #include<stdio.h>

```
Answer: (penalty regime: 0 %)
      #include<stdlib.h>
      #include<math.h>
   4 √ struct triangle{
           int a,b,c;
   5
   6
           double area;
   7
      double calculatearea(int a,int b,int c){
           double p=(a+b+c)/2.0;
   9
           return sqrt(p*(p-a)*(p-c)*(p-c));
  10
  11
  12 int comparetriangles(const void *x,const void *y){
           struct triangle *t1=(struct triangle *)x;
  13
           struct triangle *t2=(struct triangle *)y;
  14
           return (t1->area > t2->area)-(t1->area < t2->area);
  15
  16
  17 v int main(){
          int n,i;
  18
           scanf("%d",&n);
  19
           struct triangle triangle[n];
  20
           for(i=0;i<n;i++){</pre>
  21 •
               scanf("%d %d %d", &triangle[i].a,&triangle[i].b,&t
  22
               triangle[i].area=calculatearea(triangle[i].a,trian
  23
  24
           qsort(triangle ,n,sizeof(struct triangle),comparetrian
  25
           for(i=0;i<n;i++){</pre>
  26 •
               printf("%d %d %d\n",triangle[i].a,triangle[i].b,tr
  27
  28
  29
           return 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	30	}			
3 3 4 5 3 4 5 4 5 7 24 25 5 12 13 5 12 13 5 12 13 7 24 25 7 24 25					
3 3 4 5 3 4 5 4 5 7 24 25 5 12 13 5 12 13 5 12 13 7 24 25 7 24 25					
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7 24 25 5 12 13 5 12 13 5 12 13 7 24 25 7 24 25		Input	Expected	Got	
	~	7 24 25 5 12 13	5 12 13	5 12 13	~