## Week 14

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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.

In lines follow with three integers on each separated by single spaces - length, width, and height, which are length, width and height in feet of the i-th box.

Constraints

I a n = 100

Use of from the input which has a height lesser than 47 feet, print its volume in a separate line.

Sample Input 0

4

555

12-40

103-41

72-42

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

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

```
#include<stdio.h>
 1
 2
    int main()
 3 , {
         int t,i=0;
scanf("%d",&t);
while(i<t)</pre>
4
5
 6
 7 *
             int h,l,w,vol;
scanf("%d %d %d",&l,&w,&h);
8
9
10
             if(h<41)
11 ,
              {
                  vol=h*l*w;
12
                 printf("%d\n",vol);
13
14
             }
15
             i++;
16
17 }
```

	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
F Flag question

You are given n triangles, specifically, their sides ai, bi and ci. 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  $a_l$ ,  $b_l$  and  $c_l$  on each separated by single spaces.

Constraints

 $1 \le n \le 100$ 

 $1 \leq a_i \ b_i \ c_i \leq 70$ 

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

Output Format

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

Sample Input 0

3

7 24 25

5 12 13

345

Sample Output 0

345

5 12 13

7 24 25

Explanation 0

The square of the first triangle is 84. The square of the second triangle is 30. The square of the third triangle is 6. So the sorted order is the reverse one.

```
#include<stdio.h>
#include<math.h>
     typedef struct
          int b;
int c;
          int area;
     }Triangle;
int area(int a,int b, int c)
10
11 + {
12
          int p=(a+b+c)/3;
13
          return sqrt(p*(p-a)*(p-b)*(p-c));
14
      void sort(Triangle triangles[],int n)
16 + {
17
          for(int i=0;i<n-1;i++)
18 ·
19
               for(int j=0;j<n-i-1;j++)</pre>
20
                    if(triangles[j].area>triangles[j+1].area)
21
22
                        Triangle temp=triangles[j];
triangles[j]=triangles[j+1];
23
24
25
26
                        triangles[j+1]=temp;
27
28
          }
30
31
32
     int main()
          int n;
scanf("%d",&n);
Triangle triangles[n];
33
34
35
36
          for(int i=0;i<n;i++)</pre>
               int a,b,c;
scanf("%d %d %d",&a,&b,&c);
37
38
               triangles[i].a=a;
40
41
               triangles[i].b=b;
triangles[i].c=c;
42
               triangles[i].area=area(a,b,c);
43
44
45
          for(int i=0;i<n;i++)
46
47
48
               printf("%d %d %d\n",triangles[i].a,triangles[i].b,triangles[i].c);
49
50 }
```

	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! <