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Question1: BoxesthroughaTunnel

ProblemStatement:

Youaretransportingsomeboxesthroughatunnel,whereeachboxisaparallelepiped,and is characterized by its length, width and height.

The height of the tunnel is 41 feet and the width can be assumed to be in finite. Abox 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** 

Thefirstlinecontains a single integern, denoting the number of boxes.

nlinesfollowwiththreeintegersoneachseparatedbysinglespaces-lengthi,widthiand heighti which are length, width and height in feet of the i-th box.

Constraints

1<n<100

1 ≤ lengthi, widthi, heighti ≤ 100

**Output Format** 

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



## SampleInput

4

555

1240

10541

7242

## SampleOutput

125

80

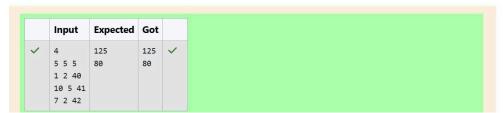
## Explanation

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

Thesecondboxissufficientlylow,itsvolumeis1x2x4==80.

Thethirdboxisexactly41feettall,soitcannotpass.Thesamecanbesaidaboutthe fourth box.

```
#include <stdio.h>
2 v int main(){
       int n;
3
       scanf("%d",&n);
4
5 *
       for (int i=0;i<n;i++){
           int length, width, height;
          scanf("%d %d %d",&length,&width,&height);
8
          if(height < 41){
9 *
           int volume=length*width*height;
10
11
               printf("%d\n",volume);
12
13
       }
14 }
```





Question2:

SmallTriangles,LargeTriangles

You are given n triangles, specifically, their sides ai, bi and ci. Print them in the same stylebutsorted by their areas from the smallest one to the largest one. It is guaranteed that all the areas are different.

Thebestwaytocalculateavolumeofthetrianglewithsidesa,bandcisHeron'sformula:

S=p\*(p-a)\*(p-b)\*(p-c)wherep=(a+b+c)/2.

InputFormat

 $First line of each test file contains single integern. \\ n lines follow with a i, biand cione ach separated by$ 

single spaces.

Constraints

1≤n≤100

1≤ai,bi,ci≤70

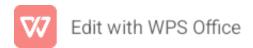
ai+bi>ci,ai+ci>biandbi+ci>ai Output

**Format** 

Printexactlynlines.Oneachlineprint3integersseparatedbysinglespaces,whichareai, bi and ci of the corresponding triangle.

SampleInput

3



72425

51213

345

SampleOutput

3 4 5

51213

72425

## Explanation

Thesquareofthefirsttriangleis84. Thesquareofthese condtriangleis30. The square of the third triangle is 6. So, the sorted order is the reverse one.

```
Answer: (penalty regime: 0 %)
      #include <stdio.h>
   1
       #include <math.h>
   2
       #include <stdlib.h>
   4 v typedef struct {
          double area;
   5
   6
         int a,b,c;
   7
      }Triangle;
   8
   9 - double calculate_area(int a,int b,int c){
  10
        double p=(a+b+c)/2.0;
           return sqrt(p*(p-a)*(p-b)*(p-c));
  11
  12 }
  13 v int compare(const void*x,const void*y){
  14
          Triangle *t1=(Triangle *)x;
  15
           Triangle *t2=(Triangle *)y;
  16
          if (t1->area < t2->area) return -1;
          if (t1->area > t2->area) return 1;
  17
  18
          return 0;
  19 }
  20 - int main(){
  21
          int n;
          scanf("%d",&n);
  22
  23
          Triangle triangles[n];
  24
  25 1
          for (int i=0; i<n;i++){
  26
              int a,b,c;
               scanf("%d %d %d",&a,&b,&c);
  27
  28
              triangles[i].a = a;
  29
              triangles[i].b = b;
  30
              triangles[i].c = c;
  31
  32
              triangles[i].area = calculate_area(a,b,c);
  33
  34
  35
           qsort(triangles, n, sizeof(Triangle),compare);
  36
           for(int i=0;i<n;i++){</pre>
  37 ₹
              printf("%d %d %d\n",triangles[i].a, triangles[i].b, triangles[i].c);
  38
  39
  40
          return 0;
  41 }
      Input
              Expected Got
              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! <
```