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Question1: BoxesthroughaTunnel

ProblemStatement:

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

Theheightofthetunnelis41feetandthewidthcanbeassumedtobeinfinite.Aboxcan becarriedthroughthetunnelonlyifitsheightisstrictlylessthanthetunnel'sheight.Find thevolumeofeachboxthatcanbesuccessfullytransportedtotheotherendofthetunnel.

Note: Boxes cannot be rotated.

Input Format

Thefirstlinecontainsasingleintegern,denotingthenumberofboxes.

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

Thefirstboxisreallylow,only5feettall,soitcanpassthroughthetunnelanditsvolumeis 5 x 5 x 5 = 125.

Thesecondboxissufficientlylow,itsvolumeis1x2x4==80.

Thethirdboxisexactly41feettall,soitcannotpass.Thesamecanbesaidaboutthe fourth box.

```c
#include <stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    for (int i=0;i<n;i++){
        int length,width,height;
        scanf("%d %d %d",&length,&width,&height);

        if(height < 41){
            int volume=length*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	✓

Question2: SmallTriangles,LargeTriangles

You are given n triangles, specifically, their sides ai, bi and ci. Print them in the same stylebutsortedbytheirareasfromthesmallestonetothelargestone.Itisguaranteedthatall the areas are different.

Thebestwaytocalculateavolumeofthetrianglewithsidesa,bandcisHeron'sformula:

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

InputFormat

Firstlineofeachtestfilecontainssingleintegern.nlinesfollowwithai,biandcioneach 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.Thesquareofthesecondtriangleis30.Thesquareof the third triangle is 6. So, the sorted order is the reverse one.

Answer: (penalty regime: 0 %)

```c
#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! ✓