A. Five Dimensional Points

You are given set of n points in 5-dimensional space. The points are labeled from 1 to n. No two points coincide.

We will call point a *bad* if there are different points b and c, not equal to a, from the given set such that angle between vectors and is acute (i.e. strictly less than). Otherwise, the point is called *good*.

The angle between vectors and in 5-dimensional space is defined as , where is the scalar product and is length of .

Given the list of points, print the indices of the good points in ascending order.

Input

The first line of input contains a single integer n $(1 \leq n \leq 10^3)$ — the number of points.

The next n lines of input contain five integers a_i, b_i, c_i, d_i, e_i $(|a_i|, |b_i|, |c_i|, |d_i|, |e_i| \leq 10^3)$ — the coordinates of the i-th point. All points are distinct.

Output

First, print a single integer k — the number of good points.

Then, print k integers, each on their own line — the indices of the good points in ascending order.

Examples

input
```
6
0 0 0 0 0
1 0 0 0 0
0 1 0 0 0
0 0 1 0 0
0 0 0 1 0
0 0 0 0 1
```
output
```
1
1
```

input
```
3
0 0 1 2 0
0 0 9 2 0
0 0 5 9 0
```
output
```
0
```

Note

In the first sample, the first point forms exactly a angle with all other pairs of points, so it is good.

In the second sample, along the cd plane, we can see the points look as follows:

We can see that all angles here are acute, so no points are good.