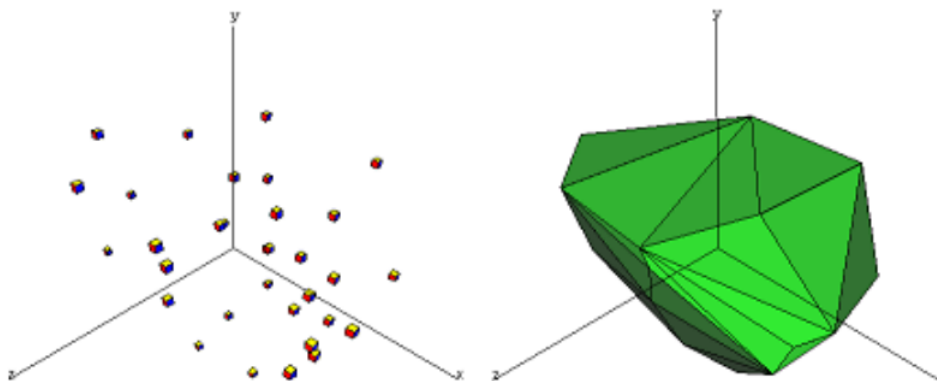


## 5090 3D Convex Hull

There are  $N$  points in 3D-space which make up a 3D-Convex hull\*. How many faces does the 3D-convexhull have? It is guaranteed that all the points are not in the same plane.



In case you don't know the definition of convex hull, here we give you a clarification from Wikipedia:

\* **Convex hull:** In mathematics, the convex hull, for a set of points  $X$  in a real vector space  $V$ , is the minimal convex set containing  $X$ .

### Input

There are several test cases. In each case the first line contains an integer  $N$  indicates the number of 3D-points ( $3 < N \leq 300$ ), and then  $N$  lines follow, each line contains three numbers  $x, y, z$  (between -10000 and 10000) indicate the 3D-position of a point.

### Output

Output the number of faces of the 3D-Convex hull.

### Sample Input

```
7
1 1 0
1 -1 0
-1 1 0
-1 -1 0
0 0 1
0 0 0
0 0 -0.1
7
1 1 0
1 -1 0
-1 1 0
-1 -1 0
0 0 1
0 0 0
0 0 0.1
```

**Sample Output**

8  
5