CONVEX HULL

In this programming problem, your goal is to compute the convex hull for a set of n points in three-dimensional Euclidean space, i.e. (x, y, z). In addition to source code, please also submit a short write up with the following details:

1. Cite your reference for the convex hull algorithm
2. Explain the computation - this is a test of your writing and explanation ability.

Please ensure that your code is well commented and easy to understand.

Input File: `CONVEX.IN`

The first line specifies the number of points $n < 10,000$. The points are specificed in the subsquent n lines. Each point is specified with three floats corresponding to the coordinates (x, y, z).

Example

```
5
0.0 0.0 1.0
1.0 0.0 0.0
0 0 0
0.0 2.0 0.0
-1.0 -1.5 -3.0
```

Output File: `CONVEX.OUT`

The output file contains a set of points that specify the convex hull for the input points. The first line specifies the number of k points in the convex hull and the points are specificed in the subsquent k lines in the same format as the input file. Clearly, $k \leq n < 10,000$.

Example

```
4
0.0 0.0 1.0
1.0 0.0 0.0
0.0 2.0 0.0
-1.0 -1.5 -3.0
```