

Katrina is a giant flying monster, in the shape of a convex polyhedron. It's dark, so she has lit a powerful point light source (strictly on the outside of Katrina by margin of at least 0.1). This casts a shadow on the ground. Calculate the size of the shadow!

Input

Multiple test cases.

In each test case, the first three lines has three real numbers each, with each line representing a point in 3D coordinates (x, y, z) , where $-1000 \leq x, y, z \leq 1000$. These three points together determine a plane, the plane is the ground. Safely assume that the three points of the coordinates are different and not collinear. The next line of three real numbers is the point source.

Followed by an integer n ($1 \leq n \leq 100$) representing the number of convex polyhedral vertices. Followed by n rows, each row of three real numbers, representing a vertex of the convex polyhedron.

Output

For each test case, output the answer on one line rounded to 2 digits after the decimal.

Sample Input

```
0 0 0
0 1 0
1 0 0
0 0 2
8
0 0 1
0 1 1
1 0 1
1 1 1
0 0 0
0 1 0
1 0 0
1 1 0
```

Sample Output

```
4.00
```