Problem F: Post Carriers of the Galaxy

You are a space postal carrier. Your job is to deliver parcels in your spaceship from planet to planet. The number of parcels you can deliver depends on how much gas you need to carry in your ship to make a jump from one planet to another. The less gas you need to carry, the more parcels you can deliver, and the richer you become. You can refuel along the way at any planet that you stop at. And, since you work for the United Federation of Planets Postal Service, time and the amount of gas used is irrellevant. (It does not matter how many jumps you need to make as long the parcels are delivered.)

Given a star map, you need to figure out the smallest possible fuel tank that your ship will need to deliver to any of the planets. The amount of gas needed to make a jump between two planets is proportional to the distance between the two planets. I.e., a distance of 2 light years takes 2 litres of plasma fuel. Note that fuel tanks are in integer sizes, e.g., 2 litres, 3 litres, 4 litres, etc.

Write a program that reads in the locations of all the planets and determines the smallest possible fuel tank (in litres) that your ship will need.

Input

Your program will read from the keyboard (stdin) several lines of text. The first line of the input consists of an integer, N, denoting the number of planets. This is followed by N lines, where each line is of the form:

```
X Y Z
```

where `X`, `Y`, and `Z` are integers, denoting the cartesian coordinates of the planet (in light years).

Semantics:
There are at most 10000 planets in the Federation ($1 < N \leq 10000$).

The Federation is cubic and is at most a 1000 light years across in each of the dimensions ($0 \leq$ `X`, `Y`, `Z` ≤ 1000).

Recall that if planet P is at (X_1, Y_1, Z_1) and planet Q is at (X_2, Y_2, Z_2), then the distance between P and Q is

$$\textit{distance} = \sqrt{(X_1 - X_2)^2 + (Y_1 - Y_2)^2 + (Z_1 - Z_2)^2}$$

Output

Your program must output to the console (stdout). Your program must output a single integer denoting the size of the fuel tank your ship will need. The output should be terminated by a new-line.

Sample Input	*Sample Output*	*Sample Output, with visualized whitespace*
2 0 0 0 0 2 2	3	3\n

Sample Input	*Sample Output*	*Sample Output, with visualized whitespace*
4 1 2 3 4 5 6 7 8 9 12 12 12	8	8\n

Sample Input	*Sample Output*	*Sample Output, with visualized whitespace*
7 0 0 0 0 0 1 0 0 2 0 1 2 0 2 2 0 2 1 0 2 0	1	1\n

Note: ␣ is a space, and \n is a newline character.