

PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

B. Cover Points

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

There are n points on the plane, $(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)$.

You need to place an isosceles triangle with two sides on the coordinate axis to cover all points (a point is covered if it lies inside the triangle or on the side of the triangle). Calculate the minimum length of the shorter side of the triangle.

Input

First line contains one integer n ($1 \leq n \leq 10^5$).

Each of the next n lines contains two integers x_i and y_i ($1 \leq x_i, y_i \leq 10^9$).

Output

Print the minimum length of the shorter side of the triangle. It can be proved that it's always an integer.

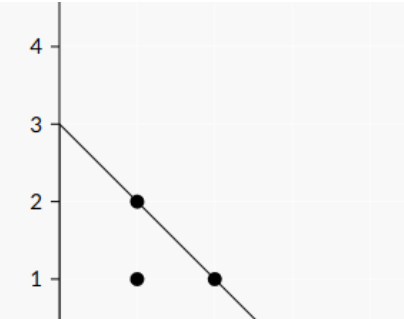
Examples

input	Copy
3 1 1 1 2 2 1	
output	Copy
3	

input	Copy
4 1 1 1 2 2 1 2 2	
output	Copy
4	

Note

Illustration for the first example:



Codeforces Round #511 (Div. 2)

Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Problem tags

geometry math *900

No tag edit access

→ Contest materials

- Announcement (en)
- Tutorial (en)

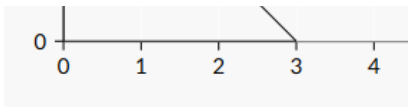
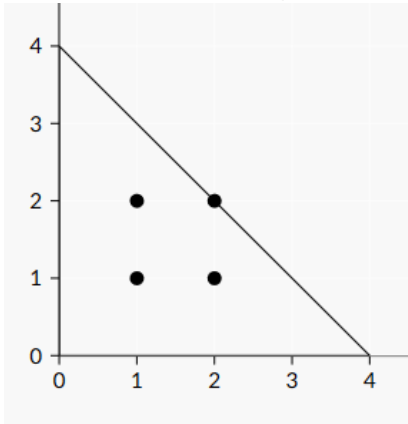


Illustration for the second example:



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