

Problem A. Academic Distance

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

Starting from the second semester, Mr. Eto will take classes at Kyoto University. Mr. Eto is not accustomed to the structure of the university because in the first semester he had only online lectures.

There are N classes today. The schedule contains the coordinates of N classrooms in the order in which they have to be visited. The coordinates of the i -th classroom are (x_i, y_i) . Assuming Mr. Eto starts the day in the first classroom, and ends in the N -th classroom, calculate the total distance he has to travel.

In Kyoto University campus, the distance traveled from the coordinates (a, b) to the coordinates (c, d) is equal to $|a - c| + |b - d|$.

Input

The first line of the input contains one integer N ($1 \leq N \leq 100$), the number of classrooms in today's schedule. Then N lines follow, i -th of them containing integer coordinates x_i and y_i of the i -th classroom in the schedule ($-100 \leq x_i, y_i \leq 100$).

Output

Print one integer: the total distance traveled by Mr. Eto by the end of the day.

Examples

standard input	standard output
3 1 2 2 3 4 6	7
1 0 0	0
4 -2 3 1 4 5 2 4 -2	15