Colorful Socks

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Abid has a beautiful collection of socks with colors 1 to n. Of color i, there are a_i socks in his drawer.

While preparing for a party, Abid finds himself in a tough spot when he realizes that his brother swiped some socks, taking b_i socks of color i from his drawer.

Suddenly, the lights go out, and Abid can't tell the colors apart. He wants to grab some socks and later put on a pair of socks with the same color.

Help Abid by telling him the minimum number of socks he needs to grab.

Input

The input contains three lines.

The first line contains an integer n ($1 \leq n \leq 2 \times 10^5$) — the number of different colors of socks Abid had.

The second line contains n space-separated integers a_1, a_2, ..., a_n ($1 \leq a_i \leq 10^9$) — the initial number of socks of each color in Abid's drawer before his brother took some.

The third line contains n space-separated integers b_1, b_2, ..., b_n ($0 \leq b_i \leq a_i$) — the number of socks of each color that Abid's brother took from the drawer.

Output

Output a single integer in a line — the minimum number of socks Abid must grab to guarantee that he finds at least 2 socks of the same color.

If it is not possible to find a pair of socks of the same color, output -1.

Examples

standard input	standard output
3 4 4 4 1 1 1	4
1 4 0	2
2 5 10 4 9	-1

Note

In the first test case, if Abid grabs 4 socks, it can be proven that he will find at least 2 socks of the same color.

In the second test case, Abid's brother did not take anything, and all the socks in the drawer have the same color. So Abid can grab any 2 socks.

In the third test case, all the socks remaining in the drawer have different colors.