

COCI '11 Contest 1 #4 Ples

Time limit: 1.0s **Memory limit:** 32M

There are N boys and N girls at a dance party. We have measured their heights. Each boy will only dance with a girl and each girl will only dance with a boy. Everyone will dance with at most one partner.

Each boy either wants to dance with a girl who is taller than him or with a girl who is shorter than him. Analogously, each girl either wants to dance with a boy who is taller than her or with a boy who is shorter than her. Boys and girls who are equally tall never want to dance with each other.

Respecting everyone's wishes, determine the maximum number of dancing pairs that can be achieved.

Input Specification

The first line of input contains the positive integer N ($1 \leq N \leq 100\,000$).

The second line of input contains N integers whose absolute values are between 1 500 and 2 500, inclusive. Their absolute values represent the height of each of the boys in millimetres. Positive height values indicate boys who want to dance with girls taller than themselves, while negative height values indicate boys who want to dance with girls shorter than themselves.

The third line of input contains N integers whose absolute values are between 1 500 and 2 500, inclusive. Their absolute values represent the height of each of the girls in millimetres. Positive height values indicate girls who want to dance with boys taller than themselves, while negative height values indicate girls who want to dance with boys shorter than themselves.

Output Specification

The only line of output must contain the maximum number of dancing pairs.

Sample Input 1

```
1
-1800
1800
```

Sample Output 1

```
0
```

Sample Input 2

```
1
1700
-1800
```

Sample Output 2

```
1
```

Sample Input 3

```
2
-1800 -2200
1900 1700
```

Sample Output 3

```
2
```