

The people of RGB Street have decided to paint each of their houses red, green, or blue. They've also decided that no two neighboring houses will be painted the same color. The neighbors of house i are houses $i-1$ and $i+1$. The first and last houses are not neighbors.

You will be given three integer sequences R , G and B . R_i , G_i and B_i are the costs of painting the i -th house red, green, and blue, respectively.

Find the minimal total cost required to perform the work.

Input Format

First line of input contains a single integer n — the number of houses. Each of the following n lines contains three integers R_i , G_i and B_i each.

Constraints

- $1 \leq n \leq 20$
- $1 \leq R_i \leq 1000$
- $1 \leq G_i \leq 1000$
- $1 \leq B_i \leq 1000$

Output Format

Print a single number — the minimal total cost required to perform the work.

Sample Input 0

```
3
1 100 100
100 1 100
100 100 1
```

Sample Output 0

```
3
```

Explanation 0

"RGB" is the best choice, and the total cost of the work is equal to 3.

Sample Input 1

```
3
1 100 100
100 100 100
1 100 100
```

Sample Output 1

```
102
```

Explanation 1

The minimum possible cost is 102, and there are two solutions that result in that cost: "RGR" and "RBR".

Sample Input 2

```
3
26 40 83
49 60 57
13 89 99
```

Sample Output 2

```
96
```

Sample Input 3

```
6
30 19 5
64 77 64
15 19 97
4 71 57
90 86 84
93 32 91
```

Sample Output 3

```
208
```

Sample Input 4

```
8
71 39 44
32 83 55
51 37 63
89 29 100
83 58 11
65 13 15
47 25 29
60 66 19
```

Sample Output 4

```
253
```