D - Tail of Snake

Editorial (/contests/abc438/tasks/abc438_d/editorial)

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 400 points

Problem Statement

> Snuke is observing a snake and is curious about which parts are the head, body, and tail. He divided the snake into N blocks and evaluated the head-likeness, body-likeness, and tail-likeness of each block. Then, he decided to find the division that maximizes the sum of the likeness values.

You are given length-N integer sequences $A = (A_1, A_2, \ldots, A_N)$, $B = (B_1, B_2, \ldots, B_N)$, and $C = (C_1, C_2, \ldots, C_N)$.

Find the maximum possible value of $\sum_{i=1}^{x} A_i + \sum_{i=x+1}^{y} B_i + \sum_{i=y+1}^{N} C_i$ for a pair of integers (x, y) satisfying $1 \leq x < y < N$.

Constraints

- $3 \leq N \leq 3 \times 10^5$
- $1 \leq A_i, B_i, C_i \leq 10^6$
- All input values are integers.

Input

The input is given from Standard Input in the following format:

$$
\begin{array}{llll}
N & & & \\
A_1 & A_2 & \ldots & A_N \\
B_1 & B_2 & \ldots & B_N \\
C_1 & C_2 & \ldots & C_N
\end{array}
$$

Output

Output the answer.

Sample Input 1 Copy

Copy

```
5
1 4 2 4 3
2 3 4 2 2
3 2 4 4 3
```

Sample Output 1 Copy

Copy

```
16
```

With $(x, y) = (2, 3)$, we have $\sum_{i=1}^{x} A_i + \sum_{i=x+1}^{y} B_i + \sum_{i=y+1}^{N} C_i = 1 + 4 + 4 + 4 + 3 = 16$.

Sample Input 2 Copy

Copy

```
3
1 1 1
1 1 1
1 1 1
```

Sample Output 2 Copy

Copy

```
3
```

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Sample Input 3 Copy

```
6
2 10 7 7 7 11
5 7 9 10 9 12
6 6 7 10 12 7
```

Sample Output 3 Copy

```
50
```

#telegram)

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