Golderberg

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

Joe Golderberg is a very quiet guy from Galați. He spends most of his time reading books and working as a bookseller. He also enjoys restoring books and has a special room in the basement of the bookstore for this craft. He visits this room on different days, and when he does, he can choose to put one or more books in for restoration, take one or more books out, or do nothing.

Joe received K books from his friend, Loaf. Each book i $(1 \leq j \leq K)$ has an optimal restoration time $t[j]$, which represents the ideal number of days it should stay in the special room. Additionally, each book has an optimal cost $\text{cost}[j]$, which is the maximum value he can obtain if he follows this exact restoration time. The selling price of a book is calculated using the formula:

$$\max(0, \text{cost}[j] - |b - (a + t[j])|),$$

where:

- a is the day the book was placed in restoration,
- b is the day the book was taken out.

Joe **must** put all books up for restoration. He can enter the restoration room multiple times on the same day, meaning he can leave a book in on $z[i]$ and pick it up **on the same day** $z[i]$, but in this case, it will count as 0 **full days** of restoration.

Joe wants to buy a bouquet of flowers for Loaf and needs to maximize his profit from selling the K books.

Input data

N - the number of different days. After that, N distinct days denoted $z[i]$, $(1 \leq i \leq N)$ in chronological order. After that, K - the number of different books. Two distinct arrays:

- $t[j]$, $(1 \leq j \leq K)$ - the optimal time that the j-th book needs to spend in the restoration room.
- $\text{cost}[j]$ - the maximum cost of a book after restoration.

Output data

The maximum profit you can achieve and make Loaf happy.

Constraints and clarifications

- $1 \leq N, K \leq 3 \times 10^5$
- $1 \leq N \times K \leq 3 \times 10^5$
- $1 \leq z[i] \leq 10^9$, $(1 \leq i \leq N)$
- $1 \leq t[j], \text{cost}[j] \leq 10^9$, $(1 \leq j \leq K)$

- A book **must be put up for restoration exactly once**.
- You can enter the restoration room multiple times on the same day, meaning you can both leave and take a book on $z[i]$, but this counts as 0 **full days** of restoration.

Example

standard input	standard output
2 5 14 3 10 7 1 3 13 14	26

Explanation

We have $N = 2$ available days: 5 and 14. We have $K = 3$ books, each with their respective restoration times and optimal costs.

Book 1: If placed on day 5, it should ideally be taken out on day 15, but there is no day 15 available. The closest is 14, meaning a penalty of $|14 - (5 + 10)| = 1$. So its selling price is $\max(0, 3 - 1) = 2$.

Book 2: If placed on day 5, it should ideally be taken out on day 12, but we only have day 14, meaning a penalty of $|14 - (5 + 7)| = 2$. Selling price $= \max(0, 13 - 2) = 11$.

Book 3: If placed on day 5 and removed the same day, it gets 0 **full days** of restoration. Since $t[3] = 1$, the penalty is $|5 - (5 + 1)| = 1$, so its selling price $= \max(0, 14 - 1) = 13$.

Total Profit $= 2 + 11 + 13 = 26$.