

Contest Duration: 2025-10-04(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251004T2100&p1=248>) - 2025-10-04(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251004T2240&p1=248>) (local time) (100 minutes)

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Time Limit: 5 sec / Memory Limit: 1024 MiB

Score : 525 points

Problem Statement

AtCoder Inc.'s online shop currently handles N products, and the stock of product i is A_i units remaining.

Process the following Q orders in order. The i -th order is as follows:

- Buy k_i units each of products $l_i, l_i + 1, \dots, r_i$. For products with fewer than k_i units, buy all available units. Report the total number of products bought in this order.

Note that for $i < Q$, the stock of products bought in the i -th order is reduced before proceeding to the $(i + 1)$ -th order.

Constraints

- All input values are integers.
- $1 \leq N \leq 3 \times 10^5$
- $1 \leq A_i \leq 10^{15}$
- $1 \leq Q \leq 3 \times 10^5$
- $1 \leq l_i \leq r_i \leq N$
- $1 \leq k_i \leq 10^9$

Input

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

```
N  
A1 A2 ... AN  
Q  
l1 r1 k1  
l2 r2 k2  
⋮  
lQ rQ kQ
```

Output

Output Q lines.

The i -th line should contain the total number of products bought in the i -th order.

Sample Input 1

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```
6  
2 6 4 5 7 5  
5  
1 6 1  
3 5 4  
4 4 1  
2 5 1  
1 6 100
```

Copy

Sample Output 1

Copy

```
6  
11  
0  
2  
10
```

Copy

This input contains 5 orders.

- Initially, the stocks of the products are (from product 1 onward) 2, 6, 4, 5, 7, 5 units.
- The first order is $l_1 = 1, r_1 = 6, k_1 = 1$.
 - In this order, 1, 1, 1, 1, 1, 1 units of the products are bought, for a total of 6 units.
 - After this, the stocks of the products become 1, 5, 3, 4, 6, 4 units.
- The second order is $l_2 = 3, r_2 = 5, k_2 = 4$.

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- In this order, 0, 0, 3, 4, 4, 0 units of the products are bought, for a total of 11 units.
 - After this, the stocks of the products become 1, 5, 0, 0, 2, 4 units.
- The third order is $l_3 = 4, r_3 = 4, k_3 = 1$.
 - In this order, 0, 0, 0, 0, 0, 0 units of the products are bought, for a total of 0 units.
 - After this, the stocks of the products become 1, 5, 0, 0, 2, 4 units.
- The fourth order is $l_4 = 2, r_4 = 5, k_4 = 1$.
 - In this order, 0, 1, 0, 0, 1, 0 units of the products are bought, for a total of 2 units.
 - After this, the stocks of the products become 1, 4, 0, 0, 1, 4 units.
- The fifth order is $l_5 = 1, r_5 = 6, k_5 = 100$.
 - In this order, 1, 4, 0, 0, 1, 4 units of the products are bought, for a total of 10 units.
 - After this, the stocks of the products become 0, 0, 0, 0, 0, 0 units.

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