F - Clearance

Editorial (/contests/abc426/tasks/abc426_f/editorial)

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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 $l_i, l_i + 1, \ldots, r_i$. 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:

$$
\begin{aligned}
&N \\
&A_1 \quad A_2 \quad \dots \quad A_N \\
&Q \\
&l_1 \quad r_1 \quad k_1 \\
&l_2 \quad r_2 \quad k_2 \\
&\vdots \\
&l_Q \quad r_Q \quad k_Q
\end{aligned}
$$

Output

Output Q lines.

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

Sample Input 1 Copy

Copy

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

Sample Output 1 Copy

Copy

```
6
11
0
2
10
```

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 $l_2 = 3, r_2 = 5, k_2 = 4$.

- 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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