

Contest Duration: 2025-09-14(Sun) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250914T2100&p1=248>) - 2025-09-14(Sun) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250914T2240&p1=248>) (local time) (100 minutes)

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E - Sum of Subarrays

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 475 points

Problem Statement

You are given an integer sequence $A = (A_1, A_2, \dots, A_N)$ of length N .

Q queries are given, so find the answer for each.

In the i -th query, integers L_i and R_i are given, so find $\sum_{l=L_i}^{R_i} \sum_{r=l}^{R_i} \sum_{j=l}^r A_j$ as the answer.

Constraints

- $1 \leq N, Q \leq 3 \times 10^5$
- $1 \leq A_i \leq 100$
- $1 \leq L_i \leq R_i \leq N$
- All input values are integers.

Input

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

N	Q		
A_1	A_2	\dots	A_N
L_1	R_1		
L_2	R_2		
\vdots			
L_Q	R_Q		

Output

Output Q lines. The i -th line should contain the answer to the i -th query.

Sample Input 1

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

[Copy](#)

Sample Output 1

[Copy](#)

```
24
44
74
3
```

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We explain the first query.

The value to be calculated is $\sum_{l=2}^4 \sum_{r=l}^4 \sum_{j=l}^r A_j$.

- When $l = 2, r = 2, \sum_{j=l}^r A_j = 1$.

- When $l = 2, r = 3, \sum_{j=l}^r A_j = 4$.

- When $l = 2, r = 4, \sum_{j=l}^r A_j = 7$.

- When $l = 3, r = 3, \sum_{j=l}^r A_j = 3$.

- When $l = 3, r = 4, \sum_{j=l}^r A_j = 6.$
- When $l = 4, r = 4, \sum_{j=l}^r A_j = 3.$

From the above, the value to be calculated is $(1 + 4 + 7) + (3 + 6) + 3 = 24.$

'#telegram)

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