

Problem B. Static Range Sum Queries

Time limit 1000 ms
Mem limit 524288 kB

Given an array of n integers, your task is to process q queries of the form: what is the sum of values in range $[a, b]$?

Input

The first input line has two integers n and q : the number of values and queries.

The second line has n integers x_1, x_2, \dots, x_n : the array values.

Finally, there are q lines describing the queries. Each line has two integers a and b : what is the sum of values in range $[a, b]$?

Output

Print the result of each query.

Constraints

- $1 \leq n, q \leq 2 \cdot 10^5$
- $1 \leq x_i \leq 10^9$
- $1 \leq a \leq b \leq n$

Example

Input	Output
8 4	11
3 2 4 5 1 1 5 3	2
2 4	24
5 6	4
1 8	
3 3	