

Bas1c and the game of sum

Bas1c is attending the collab social meeting of the Computer Society and the Gaming Society. One of the weird game that people play there is "The Sum". The rule is as follow:

Given an integer n and an array A consists of n non-negative integers A_1, A_2, \dots, A_n .

Each number in A will be projected onto the screen in the following order: The first number is A_1 , the second number is A_2, \dots , the n -th number is A_n , the $(n+1)$ -th number is A_1 and so on.

There are Q questions, each given 2 numbers K and B , and the player needs to calculate the sum of K consecutive integers appearing on the screen starting from the B -th integer.

Bas1c really want to win the prize to impress his friends. Help him answer all the questions!

Input

- First line: An integer n ($1 \leq n \leq 10^6$) and an integer Q ($1 \leq Q \leq 10^6$)
- Second line: An array consisting of N non-negative integers A_1, A_2, \dots, A_n ($0 < A_i < 10^9$ for every $1 \leq i \leq n$) separated by a space
- Q following lines: Each containing two numbers K and B ($1 \leq B \leq 10^6$; $1 \leq K \leq 10^6$)

Output

Q lines containing the answer of respective question

Example

Input:

5 2

4 2 6 1 7

3 2

3 9

Output:

9

12

Explanation:

First question: $K=3$, $B=2$ then the sum is $2+6+1=9$

Second question: $K=3$, $B=9$ then the sum is $1+7+4=12$

Subtasks:

25% with $B+K \leq N$ and $N, Q \leq 10^3$

25% with $B+K > N$, $K \leq 10^3$ and $Q \leq 10^3$