Problem J — limit 5 seconds

Shopping

The sale bin of Big Box Bargains contains n products in a row. The ith item has price a_i per unit. There is no limit to the quantity of any item.

There are q customers who will enter the store to buy items. The ith customer has v_i dollars, starts at item l_i and walks to the right to item r_i (inclusive), one item at a time.

Each time they encounter an item, they will buy as many units of the item as they can afford.

You are now wondering, for each customer, how much money they will have left after buying items.

Input

The first line of input contains two space-separated integers n and q ($1 \leq n, q \leq 200{,}000$).

The next line of input contains n space-separated integers a_i ($1 \leq a_i \leq 10^{18}$).

Each of the next q lines contains three space-separated integers v_i ($1 \leq v_i \leq 10^{18}$), l_i, and r_i ($1 \leq l_i \leq r_i \leq n$).

Output

For each of the q customers, print, on a single line, a single integer indicating the remaining amount of money after shopping.

Sample Input	Sample Output
5 3 5 3 2 4 6 8 5 5 107 1 4 7 3 5	2 0 1