

Problem F. Mario Party

Input file: **standard input**
Output file: **standard output**
Time limit: 15 seconds
Memory limit: 512 megabytes

Mario Party is a classic board game featuring numerous minigames. In this game, players possess coins and aim to collect stars at particular positions. For simplicity, we treat the board as a 1 by n grid with grids labeled with 1 to n from left to right, and there is an integer a_i in cell i . Suppose a player is currently in the cell i with x coins. He may perform the following operation:

Move to cell $i + 1$, and the number of coins he possesses becomes $x + a_{i+1}$ if $x + a_{i+1} \geq 0$, and remains the same otherwise .

You have to answer q independent queries of the following form:

Suppose a player is currently in cell l with x coins. Compute the number of coins he possesses after he travels to cell r by performing the above operations $r - l$ times.

Input

The first line contains an integer T ($1 \leq T \leq 4$), denoting the number of test cases.

The first line of each test case contains two integers n, q ($1 \leq n, q \leq 5 \cdot 10^5$), denoting the number of cells in the grid and the number of queries, respectively.

The second line of each test case contains n integers $a_1, a_2, \dots, a_n$ ($\sum_{i=1}^n |a_i| \leq 10^6$).

Each of the following q lines contains integers l_i, r_i, x_i ($1 \leq l_i \leq r_i \leq n$, $0 \leq x_i \leq 10^6$), denoting the parameters of the i -th query.

Output

For each query in each test case, output an integer in one line, denoting the answer.

Example

standard input	standard output
1	8
5 6	5
1 -2 3 -4 5	8
1 5 0	5
1 5 1	6
1 5 2	7
1 5 3	
1 5 4	
1 5 5	