Difference Array

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

You are given an array A of N integers.

You have U updates, with each update consisting of three integers, l, r and v. Increment $A_l, A_{l+1}, \cdots, A_r$ by v.

Output $A_1, A_2, \cdots, A_N$ after all U updates.

Input

The first line contains two integers, N and U.

The next line contains N integers, $A_1, A_2, \cdots, A_N$.

The next U lines contain three integers each, l, r and v.

Output

Output a single line with N integers, A_1 to A_N.

Scoring

For all testcases,

- $1 \leq N, U \leq 10^6$

- $0 \leq A_i, v \leq 10^9$

- $1 \leq l \leq r \leq N$

Example

standard input	standard output
8 1 3 1 4 1 5 9 2 6 2 6 7	3 8 11 8 12 16 2 6