

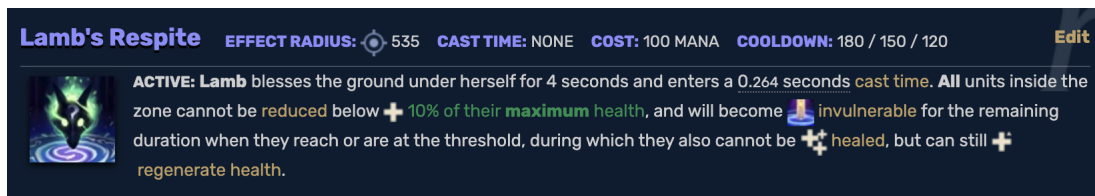
# Lamb's Respite

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            3 seconds  
Memory limit:         1024 megabytes

Wookje is playing the game *League of Legends*, where two teams of players fight against each other. Each player manages a champion whose status can be represented by two integers: the *health*  $h$ , and the *maximum health*  $H$ . If a champion's health is less than or equal to zero ( $h \leq 0$ ), the champion dies and leaves the game immediately with  $h = 0$ . If a champion's health is above the maximum health ( $h > H$ ), then it is adjusted to its maximum health.  $H$  will always be a positive integer.

In a teamfight, the health of the champion may increase or decrease. More specifically, during a teamfight, the champion was subject to  $n$  actions. The  $i$ -th ( $1 \leq i \leq n$ ) action increases the health of the champion by  $a_i$ , subject to the rules above. If  $a_i$  is positive, it means the champion was healed. If  $a_i$  is negative, it means the champion was attacked. If  $a_i$  is zero, then nothing happened to the champion.

Wookje's favorite champion in League of Legends is a lamb named *Kindred*. Kindred has a ultimate ability named *Lamb's Respite*. Let's see what this ability does.



Formally, consider a champion with maximum health  $H$ . If Wookje activates *Lamb's Respite* from right before the  $l$ -th action until right after the  $r$ -th action, a champion's health will never fall below  $\lceil \frac{H}{10} \rceil$  during these actions. If a champion's health was less than or equal to  $\lceil \frac{H}{10} \rceil$  right before the  $l$ -th action, or would hypothetically be less than or equal to  $\lceil \frac{H}{10} \rceil$  after the  $i$ -th action for some  $l \leq i \leq r$ , then its health is set to  $\lceil \frac{H}{10} \rceil$  and does not change any further until after the  $r$ -th action completes. Otherwise, *Lamb's Respite* does not affect how the champion's health changes.

It is very important to make the right decision on when to activate *Lamb's Respite*. Wookje wants to improve his decision-making skills. However, the teamfights are too complicated, therefore it's hard for him to know when to activate *Lamb's Respite*. To help him, please process the following  $q$  queries:

- 1  $l$   $r$   $x$ : The champion's maximum health is  $x$ , and its health starts at  $x$ . *Lamb's Respite* is active from right before the  $l$ -th action to right after the  $r$ -th action. Output the health of the champion after the  $n$  actions. If the champion dies, output 0. ( $1 \leq l \leq r \leq n, 1 \leq x \leq 10^9$ ).
- 2  $i$   $x$ : Update  $a_i$  to  $x$ . ( $1 \leq i \leq n, -10^9 \leq x \leq 10^9$ ).

## Input

The first line contains two integers,  $n$  and  $q$  ( $1 \leq n, q \leq 300\,000$ ).

The second line contains  $n$  integers. The  $i$ -th integer is  $a_i$  ( $|a_i| \leq 10^9$ ).

The next  $q$  lines contain several integers denoting the queries in the described form.

There is at least 1 query of type 1.

## Output

For each query of type 1, output a single integer denoting the answer to that query. Each answer should go on its own line.

## Examples

standard input	standard output
4 10 0 1 1 -1 1 2 4 2 2 2 -1 1 2 4 2 1 2 3 2 2 1 -1 1 1 4 2 1 2 4 2 2 1 -2 1 1 4 2 1 2 4 2	1 1 0 1 1 1 0
6 6 2 5 -3 8 1 -4 1 2 5 7 1 1 3 2 2 2 -1 1 4 6 2 2 1 -1 1 1 6 6	3 0 0 1