

# Divide

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            6 seconds  
Memory limit:         1024 megabytes

Given an integer sequence  $a_1, a_2, \dots, a_n$  of length  $n$ . For an interval  $a_l, \dots, a_r$  in this sequence, a *Reduce* operation divides the maximum value of the interval by 2 (rounding down). If there are multiple maximum values, choose the one with the smallest index. There are  $q$  queries. Given three integers  $l, r, k$  each time, query the maximum value of the interval after performing  $k$  *Reduce* operations on the  $a_l, \dots, a_r$  interval. The queries are independent of each other. That is to say, each time the query starts from the initially given sequence.

## Input

The two integers  $n, q$  ( $1 \leq n, q \leq 10^5$ ) in the first line represent the sequence length and the number of queries.

The second line contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $0 \leq a_i \leq 10^5$ ).

The next  $q$  lines each have three integers  $l, r, k$  ( $1 \leq l \leq r \leq n, 0 \leq k \leq 10^9$ ), representing a query.

## Output

For each query, output an integer in one line, representing the maximum value of the interval since the operation started from the initial sequence.

## Examples

standard input	standard output
3 2	2
2 0 2	2
2 3 0	
1 3 0	
6 6	1
9 5 0 3 6 7	0
1 4 7	7
3 3 233	0
6 6 0	0
3 4 4	9
4 5 15	
1 1 0	