

## Problem H. Honorable Mention

Input file: *standard input*  
Output file: *standard output*  
Time limit: 5 seconds  
Memory limit: 256 mebibytes

Ilya Zban has an array  $a_1, a_2, \dots, a_n$ . A segment  $[l \dots r]$  of the array is the array  $a_l, a_{l+1}, \dots, a_r$ .

Ilya has  $q$  ordered triples of the form  $(l, r, k)$ , where  $1 \leq l \leq r \leq n$  and  $1 \leq k \leq r - l + 1$ . For each such triple, he asked you to answer the following query: “what is the largest sum of sums of elements of  $k$  non-empty non-intersecting subsegments of the segment  $[l \dots r]$ ?”.

### Input

The first line of input contains two integers  $n$  and  $q$ : the number of elements in the array and the number of queries ( $1 \leq n, q \leq 35\,000$ ).

The second line contains  $n$  space-separated integers  $a_1, a_2, \dots, a_n$ : the given array ( $-35\,000 \leq a_i \leq 35\,000$ ).

The next  $q$  lines contain queries. Each of them contains three integers  $l, r, k$ : the given segment and the number of non-intersecting subsegments on it that you should find ( $1 \leq l \leq r \leq n, 1 \leq k \leq r - l + 1$ ).

### Output

Output  $q$  integers on separate lines: the answers to the queries.

### Examples

standard input	standard output
5 5 -1 2 -3 4 -5 1 5 1 1 5 2 1 5 3 1 5 4 1 5 5	4 6 5 2 -3
5 1 7 7 7 7 7 1 5 1	35