

# Balls and Bins

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          2 seconds  
Memory limit:       256 megabytes

Bobo had  $n$  balls and  $n$  bins which were both conveniently labeled by  $1, 2, \dots, n$ . Initially, the  $i$ -th ball had beautifulness  $w_i$ .

He wanted to put balls into bins. Unfortunately, it was not always possible. Bobo got  $m$  information. The  $i$ -th information  $(a_i, b_i)$  said that the  $a_i$ -th ball can be put into the  $b_i$ -th bin. As one bin can contains at most one ball, Bobo turned to maximize the total beautifulness of balls put into bins.

However, things were quite changeable. There were  $q$  changes  $(k_i, v_i)$  which meant the beautifulness of the  $k_i$ -th ball was changed to  $v_i$ . Bobo would like to know the maximum total beautifulness after each change. Note that he was allowed to rearrange as many balls as he wished.

## Input

The first line contains 3 integers  $n, m, q$  ( $1 \leq n, m \leq 2 \times 10^5, 1 \leq q \leq 500$ ).

The second line contains  $n$  integers  $w_1, w_2, \dots, w_n$  ( $|w_i| \leq 10^4$ ).

The  $i$ -th of the following  $m$  lines contains 2 integers  $a_i, b_i$  ( $1 \leq a_i, b_i \leq n$ ).

And the  $i$ -th of the last  $q$  lines contains 2 integers  $k_i, v_i$  ( $1 \leq k_i \leq n, |v_i| \leq 10^4$ ).

## Output

$q$  integers denote the maximum total beautifulness after each change.

## Examples

standard input	standard output
2 2 1 5 8 1 1 2 1 1 9	9
3 3 3 1 2 4 1 1 2 2 3 3 1 2 2 4 3 8	8 10 14