

The nicest place (nicestplace)

Kleofáš works in an information booth at the entrance to a national park.

The national park consists of n places and m trails. Each trail is bidirectional, connects some pair of places, and has some difficulty. (Different trails may have the same difficulty, and they may even connect the same pair of places.)

For convenience, the places are numbered 1 through n . The beauty of each place is described by some positive integer. (The higher the number, the more beautiful the place. Different places may have the same beauty.)

The tourists come to Kleofáš with lots of questions. Each of the questions has the following form: "I'm starting my trek at the place p , and I am only able to use trails of difficulty d or less. What is the beauty of the k -th nicest place I can visit?" (Note that it can sometimes happen that the k -th nicest place is the starting one.)

Task

Kleofáš writes each question down on a piece of paper, and tells the tourist to come back in the evening for the answer. But now the evening is here and Kleofáš needs to process all the questions quickly. Write a program that does it for him.

Input specification

Warning. Large I/O. Using faster I/O routines shouldn't be strictly necessary, but it can't hurt you. Avoid slow scripting languages.

The first line of the input contains the numbers n , m (as explained above) and q (the number of questions). You may assume that $1 \leq n \leq 100,000$ and $1 \leq m, q \leq 500,000$.

The second line contains n space-separated positive integers: the beauty of each place. These values do not exceed 10^9 .

Next, there are m lines that describe the trails. For each trail, we are given the two places it connects, and its difficulty. The difficulty is a positive integer not exceeding 10^9 .

Finally, there are q lines that describe the questions. Each question is described by three positive integers: the starting place p , the maximum allowed trail difficulty d , and the index k . You may assume that d does not exceed 10^9 and that k does not exceed n .

Output specification

For each question, output a single line with a single integer: the beauty of the place described in the question. If there are fewer than k places reachable from p using only trails of difficulty d or less, output -1 instead.

Examples

input	output
2 2 3	-1
100 100	100
1 2 47	100
1 2 4747	
1 15 2	
1 74 2	
2 10000 2	

Two equally nice places, two trails, three questions. In the second question, note that ties don't matter: we don't care which of the two places is the nicest one; as both of them have beauty 100, the beauty of the 2nd nicest place has to be 100.

input	output
5 3 2	10
10 20 30 40 50	30
1 3 20	
1 2 47	
2 5 30	
1 35 2	
1 74 2	

In the first question, the tourist can only reach places 1 and 3. In the second question, she can reach places 1, 2, 3, and 5.