

Stranded

time limit per test: 1 second
memory limit per test: 939.6 megabytes
input: standard input
output: standard output

points: 100 · problem code: stranded · author: jbroeksteeg

You have a graph of n nodes and m edges. Each node either has fuel, or doesn't. At a node with fuel you can refuel any amount of fuel for free. You must answer q queries of the form: what is the minimum fuel capacity with which you can get from node a to b .

It is guaranteed that a and b will both be fuel nodes and the graph is connected.

Input Format

The first line is $n\ m$. The next line is a binary string of length m , where the i -th digit represents whether the i -th node has fuel. The next m lines are of the form $a\ b\ c$, meaning that there is an edge from a to b of length c . The next line has a single integer q , the number of queries. Finally, the next q lines are of the form $x\ y$, representing a query from x to y .

Sample Input 1

```
7 8
0101100
1 2 5
2 3 7
3 4 10
3 5 3
4 5 4
5 7 10
4 6 8
6 7 2
1
2 4
```

Sample Output 1

```
10
```

Constraints

$n \leq 1e5$ $n - 1 \leq m \leq 2e5$