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 `n`, 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

$n \leq 1e5$ $n-1 \leq m \leq 2e5$ $1 \leq c \leq 1000$ $1 \leq q \leq 1e5$