Divisibility

Two positive integers P and S are given.
$S = \overline{d_1 d_2 \ldots d_N}$ is decimal representation of integer S.
Lets define $f(l, r) = \overline{d_l d_{l+1} \ldots d_r}$.

For example, if $S = 9876$:
$d_1 = 9, d_2 = 8, d_3 = 7, d_4 = 6$
$f(2, 3) = \overline{d_2 d_3} = 87$
$f(1, 3) = \overline{d_1 d_2 d_3} = 987$
$f(4, 4) = \overline{d_4} = 6$

For each query you will be given two integers b and e that define a substring equal to $f(b, e)$.
Your task is to calculate *divisibility* of given substring.
Divisibility of given substring is equal to number of (i, j) pairs such that:
$b \le i \le j \le e$ and
$f(i, j)$ is divisible by P, assuming that 0 is divisible by any other integer.

Timelimits

Timelimits for this challenge is given here

Input Format

First line contains two integers P and Q separated by a single space. Q is the number of queries.
Second line contains a big integer S.
Next Q lines contains two integers b and e separated by a single space each - begin and end points of substring.

Constraints

$2 \le P \le 10^9$
$1000 \le S < 10^{100\,000}$
$1 \le Q \le 100\,000$
$1 \le b \le e \le N$

Output Format

Output Q lines, the i-th line of the output should contain single integer *divisibility* of the i-th query substring.

Sample Input

```
3 5
4831318
3 5
5 7
1 7
1 2
2 3
```

Sample Output

```
2
3
9
```

```
1
1
```

Explanation

In the first query, b = 3 and e = 5. Two such pairs that are divisible by P = 3 are f(3, 3) = 3 and f(5, 5). Hence the answer 2.
In the second query, b = 5 and e = 7. Three such pairs that are divisible by P are F(5, 5) = 3, f(6, 7) = 18 and f(5, 7) = 318