

Muzidabatur

Given a string **S** of lowercase Latin letters. You are to answer **Q** queries: given l and r ($1 \leq l \leq r \leq |S|$), count the number of distinct non-empty subsequences of the substring **S**[$l..r$].

Input

Multiple test cases. For each test case:

The first line of input contains a string **S**. ($|S| \leq 40000$). The second line contains a single integer **Q** ($Q \leq 100000$). **Q** lines follow, each contains two space separated integers l and r .

Input terminates by EOF.

Input data is almost uniformly-random generated, the number of "large" test cases is relatively small.

Output

For each query output one line - the answer, modulo $10^9 + 2015$.

Example

Input:

aabababb

5

1 8

1 4

3 5

5 7

3 8

aaccbb

5

1 6

3 4

2 5

1 4

3 6

Output:

63

9

6

6

27

26

2

11

8

8