

String Problem

Mr. Avantgarde has 2 binary strings s_1 and s_2 . He wants to convert s_1 into s_2 . But this task isn't as easy as it looks. He has to convert s_1 to s_2 in exactly k steps. In each step, he can select exactly m chars and xor each of them by 1. Help him to find in how many ways can he convert s_1 into s_2 by using method described above. Output answer mod 1000000009.

Constraints:

Test cases ≤ 10

Length of s_1 = length of $s_2 \leq 100$

$m \leq$ length of string

$k \leq 100$

Input:

First line will contain number of test cases. First line of test case contains s_1 . Second line of test case contains s_2 . Third line of test case contains m and k .

Output:

For each test case, output result in a new line.

Sample Input

```
2
000
111
1 3
000
110
2 4
```

Sample Output

```
6
20
```