



String Transmission

by HackerRank

Problem

Submissions

Leaderboard

Discussions

Editorial

Bob has received a binary string of length N transmitted by Alice. He knows that due to errors in transmission, up to K bits might have been corrupted (and hence flipped). However, he also knows that the string Alice had intended to transmit was not periodic. A string is not periodic if it cannot be represented as a smaller string concatenated some number of times. For example, "0001", "0110" are not periodic while "00000", "010101" are periodic strings.

Now he wonders how many possible strings could Alice have transmitted.

Input Format

The first line contains the number of test cases T . T test cases follow. Each case contains two integers N and K on the first line, and a binary string of length N on the next line.

Constraints

$$1 \leq T \leq 20$$

$$1 \leq N \leq 1000$$

$$0 \leq K \leq N$$

Output Format

Output T lines, one for each test case. Since the answers can be really big, output the numbers modulo 1000000007.

Sample Input

```
3
5 0
00000
3 1
001
3 3
101
```

Sample Output

```
0
3
6
```



Explanation




Explanation: For the second example, Alice could have transmitted "001", or "011" or "101".
For the third example, Alice could have transmitted 001, 010, 100, 011, 101, 110

Difficulty: Hard

Rate This Challenge:

[More](#)

Current Buffer (saved locally, editable)  

Java 7   

```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

 [Upload Code as File](#)☐ Test against custom input[Run Code](#)[Submit Code](#)Join us on IRC at [#hackerrank](#) on freenode for hugs or bugs.[Contest Calendar](#) | [Blog](#) | [Scoring](#) | [Environment](#) | [FAQ](#) | [About Us](#) | [Support](#) | [Careers](#) | [Terms Of Service](#) | [Privacy Policy](#) | [Request a Feature](#)