

Sherlock and Probability

Watson gave a string S to Sherlock. It is N characters long and consists of only 1s and 0s. Now he asks: Given an integer K , I'll pick two indices i and j at random between 1 and N , both inclusive. What's the probability that both $S[i]$ and $S[j]$ are 1 and $|i - j| \leq K$?

Input Format

First line contains T , the number of testcases. Each testcase consists of N (the length of S) and K in one line and string in second line.

Output Format

Print the required probability as an irreducible fraction. If required answer is 0, output 0/1.

Constraints

$$1 \leq T \leq 10^5$$

$$1 \leq N \leq 10^5$$

$$1 \leq K \leq N$$

$$1 \leq \text{Sum of } N \text{ over all testcases in one file} \leq 10^5$$

Sample input

```
2
4 3
1011
4 1
1011
```

Sample output

```
9/16
5/16
```

Explanation

test1: Out of 16 choices, 9 pairs of (i, j) satisfy our condition.

$(1, 1), (1, 3), (1, 4), (3, 1), (3, 3), (3, 4), (4, 1), (4, 3), (4, 4)$

test2: Out of 16 choices, 5 pairs of (i, j) satisfy our condition.

$(1, 1), (3, 3), (4, 4), (4, 3), (3, 4)$