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E. K-periodic Garland

time limit per test: 1 second memory limit per test: 256 megabytes

input: standard input output: standard output

You are given a garland consisting of n lamps. States of the lamps are represented by the string s of length n. The i-th character of the string s_i equals '0' if the i-th lamp is turned off or '1' if the i-th lamp is turned on. You are also given a positive integer k.

In one move, you can choose **one lamp** and change its state (i.e. turn it on if it is turned off and vice versa).

The garland is called k-periodic if the distance between each pair of adjacent turned on lamps is exactly k. Consider the case k=3. Then garlands "00010010", "1001001", "00010" and "0" are good but garlands "00101001", "1000001" and "01001100" are not. Note that the garland is not cyclic, i.e. the first turned on lamp is not going after the last turned on lamp and vice versa.

Your task is to find the **minimum** number of moves you need to make to obtain k-periodic garland from the given one.

You have to answer *t* independent test cases.

Input

The first line of the input contains one integer t ($1 \le t \le 25~000$) — the number of test cases. Then t test cases follow.

The first line of the test case contains two integers n and k ($1 \le n \le 10^6$; $1 \le k \le n$) — the length of s and the required period. The second line of the test case contains the string s consisting of s characters '0' and '1'.

It is guaranteed that the sum of n over all test cases does not exceed 10^6 ($\sum n \le 10^6$).

Output

For each test case, print the answer — the **minimum** number of moves you need to make to obtain k-periodic garland from the given one.

Example

input

6
9 2
010001010
9 3
111100000

7 4	
1111111	
10 3	
1001110101	
1 1	
1 1	
0	
output	Ору
output 1	Сору
	Сору
1	Сору
1 2	Сору
1 2 5	Сору
1 2 5 4	Сору

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