



HOME TOP CATALOG CONTESTS GYM **PROBLEMSET GROUPS** RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

B. Perfect d-Substring

time limit per test: 3 s. memory limit per test: 256 MB

You are given a binary string S of length n, consisting of only '0's and '1's. You are allowed to change at most k occurrences of '0' into '1'. Your task is to determine the maximum number of **non-overlapping perfect d-substrings** that can be extracted from S.

A **perfect d-substring** is a contiguous substring of length d consisting entirely of '1's. For example, a perfect 3-substring is 111, and a perfect 5-substring is 11111.

Input

The first line contains a single integer T — the number of test cases.

Each of the next *T* lines contains:

- Two integers k and d
- A binary string S

The constraints are as follows:

 $0 \le k \le 100, \quad 1 \le d \le 50,$ $1 \le \text{len}(S) \le 2000, \quad 1 \le T \le 150$

Output

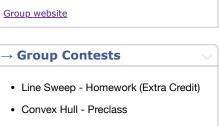
For each test case, output a single integer — the maximum number of non-overlapping perfect d -substrings that can be extracted from S.

Examples

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UIUC CS 491 Spring 2025 **Private Participant**





- Number Theory I Homework
- Line Sweep Preclass
- Number Theory II Homework
- · Combinatorics Homework
- Geometry Preclass
- Geometry Homework
- Convex Hull Homework (Extra Credit)
- · Rabin Karp Homework
- Number Theory II Preclass
- Combinatorics Preclass
- DP TSP Homework
- KMP Homework
- DP Tree Homework
- Number Theory I Preclass
- KMP Preclass
- · DP Palindromes Homework
- · Rabin Karp Preclass
- · DP Edit Distance Homework
- · DP Knapsack Homework
- DP TSP Preclass
- DP Longest Increasing Subsequence -Homework
- · DP Intro Homework
- · DP Tree Preclass
- · Greedy Homework
- · Fenwick Tree Homework