The XOR Problem

Given an integer, your task is to find another integer such that their bitwise XOR is maximum.

More specifically, given the binary representation of an integer x of length n, your task is to find another binary number y of length n with at most k set bits such that their bitwise XOR is maximum.

For example, let's say that x = "0100" and k = 1. The maximum possible XOR can be obtained with y = "1000", where x XOR y = "1100".

Input Format

The first line of input contains an integer, t, the number of tests.

The first line of each test contains a binary string representing x.

The second line of each test contains an integer, k, denoting the maximum number of set bits in y.

Constraints

- $1 \leq t \leq 100$
- $1 \leq n \leq 1000$
- $0 \leq k \leq N$

Output Format

Print exactly t lines. In the i^{th} of them, print the string denoting y in the i^{th} test case.

Sample Input 0

```
2
10010
5
01010
1
```

Sample Output 0

```
01101
10000
```

Explanation 0

For the first case, (x xor y) gives 11111 which is the maximum possible number that can be obtained.

In the second case, (x xor y) gives 11010. Note that any other y would given a lesser xor sum.