

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 $x \text{ XOR } y = "1100"$.

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, $(x \text{ xor } y)$ gives 11111 which is the maximum possible number that can be obtained.

In the second case, $(x \text{ xor } y)$ gives 11010. Note that any other y would give a lesser xor sum.