Problem A
The Fun Number System

Input: standard input
Output: standard output
Time Limit: 1 second

In a **k** bit **2**'s complement number, where the bits are indexed from **0** to **k –1**, the weight of the most significant bit (i.e., in position **k –1**), is -2^{k-1} , and the weight of a bit in any position **i (0 =i < k –1) is** 2^i . For example, a **3** bit number **101** is evaluated as $-2^2+0+2^0 = -3$ and **011** as $-0+2^1+2^0 = 3$. A negatively weighted bit is called a **negabit** (such as the most significant bit in a **2**'s complement number), and a positively weighted bit is called a **posibit**.

A Fun number system is a positional binary number system, where each bit can be either a **negabit**, or a **posibit**. For example consider a **3**-bit fun number system Fun3, where bits in positions **0**, and **2** are **posibits**, and the bit in position **1** is a negabit. $(111)_{Fun3}$ is evaluated as $2^2 -2^1 + 1 = 3$. Now you are going to have fun with the Fun number systems! You are given the description of a **k**-bit Fun number system **Funk**, and an integer **N** (Maybe negative). You should determine the **k** bits of a representation of **N** in **Funk**, or report that it is not possible to represent the given **N** in the given **Funk**. For example, a representation of **–1** in the **Fun3** number system (defined above), is **011** (evaluated as $0–2^1+2^0$), and representing **6** in **Fun3** is impossible.

Input

The first line of the input file contains a single integer **t (0 <t =100)**, the number of test cases, followed by the input data for each test case.

Each test case is given in three consecutive lines. In the first line there is a positive integer **k(1<=k <=64)**. In the second line of a test data there is a string of length **k**, composed only of letters **n** , and **p** , describing the Fun number system for that test data, where each **n (p)** indicates that the bit in that position is a **negabit (posibit)**. The third line of each test data contains an integer **N** (-2^{63} $=N<2^{63}$), the number to be represented in the **Funk** number by your program.

Output

For each test data, you should print one line containing either a **k**-bit string representing the given number **N** in the **Funk** number system, or the word **Impossible**, when it is impossible to represent the given number.

Sample Input	Output for Sample Input
2 3 pnp 6 4 ppnn 10	Impossible 1110

Problem source: Iranian Contest
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