Don't Fight The Music

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

Setsuna is studying music theory. There are n distinct pitches, numbered $1, 2, \cdots, n$. *Setsuna* wants to compose a melody P in which every pitch appears exactly once. We call a sub-melody Q **compact** if and only if there exist integers $l \leq r$ such that the set of pitches appearing in Q is exactly $\{l, l+1, \cdots, r\}$.

To compose the harmony, *Setsuna* specifies some requirements using two strings a, b, each of length n:

- For the sub-melody $P[1, i]$ consisting of the first i pitches:
  - If $a_i =$ `1`, this sub-melody must be compact.
  - If $a_i =$ `0`, this sub-melody must not be compact.
  - If $a_i =$ `?`, there is no restriction on this sub-melody.
- For the sub-melody $P[i, n]$ consisting of the last $n + 1 - i$ pitches:
  - If $b_i =$ `1`, this sub-melody must be compact.
  - If $b_i =$ `0`, this sub-melody must not be compact.
  - If $b_i =$ `?`, there is no restriction on this sub-melody.

Before solving And Revive The Melody, *Setsuna* wants to find one melody that satisfies all the requirements. You need to help *Setsuna* find **any** such melody, or report that no such melody exists.

Input

This problem contains multiple test cases.

The first line contains a positive integer T ($1 \leq T \leq 10^4$), representing the number of test cases.

For each test case:

- The first line contains an integer n ($2 \leq n \leq 2 \times 10^5$).
- The next two lines each contain a string of length n, namely a and b.

It is guaranteed that the sum of n over all test cases does not exceed 2×10^5, and that the strings contain only the characters `1`, `0`, and `?`.

Output

For each test case, output one line:

- If no solution exists, output the integer -1.
- Otherwise, output n integers $P_1, P_2, \cdots, P_n$ representing a valid answer.

Example

standard input	standard output
4 2 ?1 1? 3 ??? 0?? 4 ??1? ?0?? 5 1??01 10??1	1 2 -1 2 3 1 4 2 1 3 5 4

Note

For the third test case, all constrained sub-melodies are listed below:

- $[2, 3, 1]$ is compact.
- $[3, 1, 4]$ is not compact.