

Description

Please compute the sum of two given n -bit binary numbers.

Input

The first line of the input file contains a positive integer t indicating the number of test cases. The first line of each test case is a positive integer n denoting the length of bits. The second and third lines are the two n -bit binary numbers. The first bit of each binary number is always 0, which guarantees that the sum of the two binary numbers can still be expressed as an n -bit binary number.

Case1 : $t \leq 100$, $n \leq 100$

Case2 : $t \leq 200$, $n \leq 1000$

Case3 : $t \leq 300$, $n \leq 5000$

Case4 : $t \leq 400$, $n \leq 10000$

Output

For each test case, your program should print the sum in the same format as the binary numbers given in input.

Notice that each answer is ended with a newline character.

Sample Input

```
2
6
011001
001001
4
0010
0101
```

EOF

Sample Output

```
100010
0111
```

EOF