Swapping Digits (swappingdigits)

You are given a positive integer N. In one move you are allowed to swap any two digits of N.

For example, if N is 1234, then after swapping the first and the third digit N becomes 3214, and if N is 20005, after swapping the first and the fourth digit N becomes $00025 = 25$. Note that you can not get 20005 from 25 (i.e., you should not assume the existence of leading zeroes).

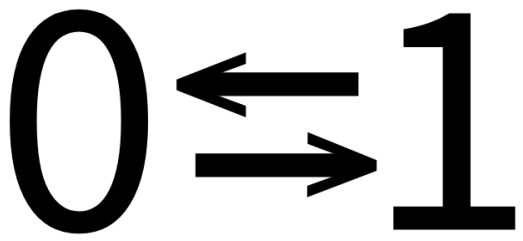

Figure 1: Swapping digits.

What is the minimum number of moves to make N divisible by 25? If it is not possible to make N divisible by 25 using the above operation some (possibly zero) number of times, then the answer is -1.

☞ Among the attachments of this task you may find a template file `swappingdigits.*` with a sample incomplete implementation.

Input

The first line of input contains an integer T denoting the number of testcases.

Each of the next T lines contains a single integer N.

Output

You should print T lines, the i-th of which containing a single integer, the answer to the i-th testcase.

Constraints

- $1 \leq T \leq 100\,000$.
- $1 \leq N < 10^{100\,000}$.
- The total number of digits of N over all testcases will not exceed $1\,000\,000$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (21 points) $N \leq 100\,000$. It is always possible to make N divisible by 25.

– **Subtask 3** (23 points) $N \leq 10^9$.

– **Subtask 4** (41 points) $N < 10^{1000}$ and the total number of digits of N over all testcases will not exceed 10 000.

– **Subtask 5** (15 points) No additional constraints.

Examples

input	output
2 1010 25	1 0

Explanation

In the **first testcase**, you can swap the second and the third digits to make $N = 1100$ which is divisible by 25. It is impossible to make N divisible by 25 using fewer moves.

In the **second testcase**, N is already divisible by 25, so no moves are needed.