Problem 2: Architectural Design

Time limit: 1 seconds

A landowner sought out that the most beneficial business would be to develop his land into commercial buildings. Each plaza should hold a few brands and also facilitates the workers by providing them accommodation in those plazas. With that in mind, he held design competitions and architects from all over the world presented their 3D models.

The landowner, being found of art and symmetry in designs, rejected all of the presented designs and asked the architects to have symmetry among buildings. He explained that if a building of a design ***d***, is at one end of the road, a building with the same design ***d***, should be at the other end of the road. If a design is unique and no other building with the same design exists, move that to the center.

Luckily, all the presented designs had one or more similar designed building in their 3D models but were scattered along the road. Moving 3D models incurs an extra cost. Therefore, the architects are seeking your expertise in developing a solution which may return the count of minimum changes required to make their design symmetrical. If no movement is required, and the design already fulfill the requirements, return 0.

Example:
Input: ccxx
Output: 2
Such that one possible design is xccx which requires minimum of two movements.

Input

The first line of the input consists of $\boldsymbol{t}$, $(\mathbf{1} \leq \boldsymbol{t} \leq \mathbf{100})$ representing the total number of test cases given. The next subsequent t lines contains test cases with n of buildings, $(\mathbf{1} \leq \boldsymbol{n} \leq \mathbf{2000})$, represented as small alphabets of English language.

Output

Output consists of $\boldsymbol{t}$ lines, the number on each line is the minimum number of movements required to make the design symmetrical. If no solution exists, print **-1**.

Sample input & output

The following is an example of a sample input and corresponding correct outputs.

Sample input	Sample Output
4 arcacer ppp eggeekgbbeg letelt	4 0 7 2