Problem B
Soldiers

Input File: B.DAT
Program Source File: B.PAS or B.C or B.CPP

The soldiers of the moon army are standing in a line, some of them looking to the left end of the line, other - to the right end of the line. Therefore, some couples of neighbors in the line could stand face to face, some couples - back to back, and some - back to face (or face to back which is the same). By a command the soldiers start to turn. One turn applies to a single couple of soldiers that are standing face to face. After the turn the soldiers are standing back to back. For a given line of soldiers it is necessary to decide whether it is possible to order the soldiers by consecutive turns in such a way that there is no couple of soldiers in the line standing face to face. If this is possible - find the minimum number of turns.

The input file contains a sequence of input data sets. In the first line of the input file there is a single number **t** – amount of tests (0 < **t** < 10). Next lines contain test data. The first line of each test contains a natural number **k** (0 < **k** < 1000), which gives the amount of next lines for current test. These lines designate the row of soldiers. The length of each line is no more then 50. The soldiers position in the line is given with a sequence of two symbols: '<' – the soldier faces towards left, '>' – the soldier faces towards right.

The output should be printed on the standard output. For each given input data set, print one number in a single line. If the arrangement for fight is impossible (the number of turns is infinite) for current test, you must print -1. If possible, print the minimal number of turns to reach this arrangement. An example is given in Figure 1.

Input	Output
3 2 ><> ‹ 1 ><‹<< 3 ‹ ‹ >	3 4 0