JAVA CASES

Problem

You are given the sequence of Nucleotides of one strand of DNA through a string SS of length NN. SS contains the character A, T, C, A, T, C, and GG only.

knows that:

- AA is complementary to TT.
- TT is complementary to AA.
- CC is complementary to GG.
- GG is complementary to CC.

Using the string SS, determine the sequence of the complementary strand of the DNA.

Input Format

- First line will contain TT, number of test cases. Then the test cases follow.
- First line of each test case contains an integer NN - denoting the length of string SS.
- Second line contains NN characters denoting the string SS.

Output Format

For each test case, output the string containing NN characters - sequence of nucleotides of the complementary strand.

Constraints

- $1 \leq T \leq 100$
- $1 \leq N \leq 100$
- S contains A, T, C, and G only

Sample 1:

Input

4

4

ATCG

4

GTCC

5

AAAAA

3

TAC

Output

TAGC

CAGG

TTTTT

ATG

1. **Problem**

There are 1010 problems in a contest. You know that the score of each problem is either 11 or 100100 points.

came to know the total score of a participant and he is wondering how many problems were actually solved by that participant.

Given the total score PP of the participant, determine the number of problems solved by the participant. Print -1−1 in case the score is invalid.

Input Format

- First line will contain TT, number of test cases. Then the test cases follow.
- Each test case contains of a single line containing a single integer PP - denoting the number of points scored by the participant.

Output Format

For each testcase, output the number of problems solved by the participant or -1−1 if the score is invalid.

Constraints

- $1 \leq T \leq 1000$
- $0 \leq P \leq 1000$

Sample 1:

Input

5

103

0

6

142

1000

Output

4

0

6

-1

10