Two players, S and T, are playing a game where they make alternate moves. S plays first.

In this game, they start with an integer N. In each move, a player removes one digit from the integer and passes the resulting number to the other player. The game continues in this fashion until a player finds he/she has no digit to remove when that player is declared as the loser.

With this restriction, its obvious that if the number of digits in N is odd then S wins otherwise T wins. To make the game more interesting, we apply one additional constraint. A player can remove a particular digit if the sum of digits of the resulting number is a multiple of 3 or there are no digits left.

Suppose $N = 1234$. S has 4 possible moves. That is, he can remove 1, 2, 3, or 4. Of these, two of them are valid moves.

- Removal of 4 results in 123 and the sum of digits $= 1 + 2 + 3 = 6$; 6 is a multiple of 3.
- Removal of 1 results in 234 and the sum of digits $= 2 + 3 + 4 = 9$; 9 is a multiple of 3.

The other two moves are invalid.

If both players play perfectly, who wins?

Input

The first line of input is an integer T ($T < 60$) that determines the number of test cases. Each case is a line that contains a positive integer N. N has at most 1000 digits and does not contain any zeros.

Output

For each case, output the case number starting from 1. If S wins then output 'S' otherwise output 'T'.

Sample Input

```
3
4
33
771
```

Sample Output

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Case 1: S
Case 2: T
Case 3: T
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