

## 11489 Integer Game

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, it's 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

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