CCO '00 P3 - The Game Of 31

Time limit: 2.0s **Memory limit:** 64M

Canadian Computing Competition: 2000 Stage 2, Day 1, Problem 3

The game of 31 was a favourite of con artists who rode the railroads in days of yore. The game is played with a deck of 24 cards: four labelled each of `1`, `2`, `3`, `4`, `5`, `6`. (That is, there are four cards labelled `1`, four cards labelled `2`, and so on.) Initially, all of the cards are spread, face up, on a table and the "discard pile" is empty. The players then take turns. During each turn, a player picks up one unused card from the table and lays it on the discard pile. The object of the game is to be the last player to lay a card such that the sum of the cards in the pile does not exceed 31. Your task is to determine the eventual winner of a partially played game, assuming each player plays the remainder of the game using a perfect strategy.

For example, in the following game player B wins:

1. Player A plays `3`.
2. Player B plays `5`.
3. Player A plays `6`.
4. Player B plays `6`.
5. Player A plays `5`.
6. Player B plays `6`.

Input Specification

The first line of the input is the number of test cases. It is followed by one line for each test case. Each such line consists of a sequence of zero or more digits representing a partially completed game. The first digit is player A's move; the second player B's move; and so on. You are to complete the game using a perfect strategy for both players and to determine who wins.

Output Specification

For each game, output `A` or `B` on a single line to indicate the eventual winner of the game.

Sample Input

```
5
356656
35665
3566
111126666
552525
```

Sample Output

```
B
B
A
A
A
```