

Problem I. Don't Split The Atom!

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

Two mad (and evil) scientists, Professor Zoom and Doctor Horrible, have just obtained n atoms of a very rare element, which they want to share between themselves. They have decided to play the following game:

First, Professor divides the atoms into two non-empty groups. Next, Doctor takes one group and uses it for his evil purposes, and splits the other into two non-empty parts. Then, Professor takes one of the parts, and divides the other one again into two, returning it to Doctor. The game goes on – with every turn, a scientist taking one of the parts, and splitting the other – until one of the players is forced to split a single atom. This results in an explosion, and the unlucky splitter loses the game (probably with his life).

Knowing the number of atoms n determine which one of the villains survives the game.



Input

The first line of input contains the number of test cases z ($1 \leq z \leq 50$). The descriptions of the test cases follow.

Every test case consists of one integer n ($1 \leq n \leq 1\,000\,000$) – the initial number of atoms.

Output

For each test case output a line containing a single character: 'A' if Professor wins the game, 'B' if Doctor wins.

Example

standard input	standard output
2	A
2	B
17	