

Ada and Game of Divisors

Ada the Ladybug is playing **Game of Divisors** against her friend Velvet Mite Vinit. The game has following rules. There is a pile of N stones between them. The player who's on move can pick at least 1 and at most $\sigma(N)$ stones (where $\sigma(N)$ stands for number of divisors of N). Obviously, N changes after each move. The one who won't get any stones ($N == 0$) loses.

As Ada the **Ladybug** is a lady, so she moves first. Can you decide who will be the winner? Assume that both players play optimally.

Input

The first line of input will contain $1 \leq T \leq 10^5$, the number of test-cases.

The next T lines will contain $1 \leq N \leq 2 \cdot 10^7$, the number of stones which are initially in pile.

Output

Output the name of winner, so either "Ada" or "Vinit".

Example Input

```
8
1
3
5
6
11
1000001
1000000
29
```

Example Output

```
Ada
Vinit
Ada
Ada
Vinit
Vinit
Ada
Ada
```