

E. Arpa and a game with Mojtaba

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Mojtaba and Arpa are playing a game. They have a list of n numbers in the game.

In a player's turn, he chooses a number p^k (where p is a prime number and k is a positive integer) such that p^k divides at least one number in the list. For each number in the list divisible by p^k , call it x , the player will delete x and add to the list. The player who can not make a valid choice of p and k loses.

Mojtaba starts the game and the players alternatively make moves. Determine which one of players will be the winner if both players play optimally.

Input

The first line contains a single integer n ($1 \leq n \leq 100$) — the number of elements in the list.

The second line contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$) — the elements of the list.

Output

If Mojtaba wins, print "Mojtaba", otherwise print "Arpa" (without quotes).

You can print each letter in any case (upper or lower).

Examples

input
4 1 1 1 1
output
Arpa

input
4 1 1 17 17
output
Mojtaba

input
4 1 1 17 289
output
Arpa

input
5 1 2 3 4 5
output
Arpa

Note

In the first sample test, Mojtaba can't move.

In the second sample test, Mojtaba chooses $p = 17$ and $k = 1$, then the list changes to $[1, 1, 1, 1]$.

In the third sample test, if Mojtaba chooses $p = 17$ and $k = 1$, then Arpa chooses $p = 17$ and $k = 1$ and wins, if Mojtaba chooses $p = 17$ and $k = 2$, then Arpa chooses $p = 17$ and $k = 1$ and wins.