Consider the following game: given two positive integers \( n \) and \( b \), players A and B take turns to write digits in base \( b \) (from 0 to \( b - 1 \)), starting with player A. The digits are written from left to right. For instance, if A writes a 5, B may write a 1 to form a 51, but not a 15. (And then A would write another digit, and then B, and so on.) If at any point during the game a multiple of \( n \) (including 0) is written (in base \( b \)), then B wins and the game finishes.

If A can indefinitely prevent B from winning, both players will eventually get bored and player A will be declared the winner. Otherwise, they will keep playing until B wins. Can you determine who will be the winner? Assume that A and B play perfectly.

**Input**

Input consists of several cases, each with \( n \) and \( b \). Assume \( 1 \leq n \leq 10^{18} \) and \( 2 \leq b \leq 10^{18} \).

**Output**

For every case, print the name of the winner.

**Sample input**

```
10 5
5 10
2 2
1000000000000000000 123456789012345
```

**Sample output**

```
A
B
B
```