

# Gotta be faster than that

Squirtle and his friends are lined up around the edge of the lake,  $n$  pokemons in all. Rather than throwing just one ball, they decided to form small equal-size groups and throw a ball around in each group. Within each group, the ball is passed around so each person gets it once until it returns to the original thrower, then the cycle repeats. Magikarp heard Bulbasaur briefly discussing strategy, so he knows the size of each group is either  $k$  or  $l$ , but he's not sure which. As Magikarp watches the balls being passed around, help him determine how big the groups are.

## Input Format

The first line contains space separated integers " $n\ k\ l$ ". The following  $n$  lines are formatted "POKEMON1 ~~~ POKEMON2" and represent a throw between POKEMON1 and POKEMON2.

## Constraints

$$3 \leq k, l < 10 < n < 10^8.$$

Each pokemon name is case sensitive and contains only letters with length  $< 20$ .

I *promise* the inputs are random (*hint hint*).

## Output Format

Output either  $k$  or  $l$  on one line.

## Sample Input 0

```
36 6 3
Ledyba ~~~ Starmie
Azumarill ~~~ Spearow
Gyarados ~~~ Dunsparce
Togepi ~~~ Shiftry
Crobat ~~~ Gulpin
Ralts ~~~ Psyduck
Gulpin ~~~ Venonat
Forretress ~~~ Venomoth
Bulbasaur ~~~ Sharpedo
Squirtle ~~~ Flareon
Electrode ~~~ Dragonair
Hitmontop ~~~ Hitmonchan
Totodile ~~~ Forretress
Bayleef ~~~ Machoke
Venomoth ~~~ Sharpedo
Dragonair ~~~ Bayleef
Totodile ~~~ Combusken
Bulbasaur ~~~ Combusken
Hitmontop ~~~ Chikorita
Ledyba ~~~ Dodrio
Psyduck ~~~ Togepi
Shiftry ~~~ Mantine
Chikorita ~~~ Weezing
Electrode ~~~ Flareon
Spinda ~~~ Sandslash
Persian ~~~ Spearow
Crobat ~~~ Baltoy
Gyarados ~~~ Venonat
Mantine ~~~ Mightyena
Azumarill ~~~ Dodrio
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```
Dunsparce ~~~ Baltoy  
Ralts ~~~ Mightyena  
Sandslash ~~~ Hitmonchan  
Squirtle ~~~ Machoke  
Weezing ~~~ Spinda  
Persian ~~~ Starmie
```

### Sample Output 0

6

### Explanation 0

Starting from Squirtle, one ball follows the path

Squirtle ~~~ Flareon ~~~ Electrode ~~~ Dragonair ~~~ Bayleef ~~~ Machoke (and repeat).

We know each group is the same size, so the output is **6**.