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 "$n\ k\ l$". Each of the following n lines is formatted "POKEMON1 POKEMON2" and represents a throw between POKEMON1 and POKEMON2.

Because Magikarp is overwhelmed by the number of balls flying around, he's not able to see every throw, so the list of throws may not be in order and direction may be flipped (e.g. A ~~~ B does not necessarily mean the ball is thrown A --> B). We do know each throw is only listed once, though.

Constraints

$3 \leq k, l < 10 < n < 10^8$ (Squirtle has a **lot** of friends).

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

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

Output Format

Output the group size on one line (it will be either k or l).

Sample Input 0

```
24 6 3
Sandslash Azumarill
Weezing Tyrogue
Psyduck Dragonair
Marshtomp Machoke
Starmie Totodile
Squirtle Machoke
Gyarados Sceptile
Psyduck Squirtle
Slakoth Bulbasaur
Dunsparce Wailord
Totodile Persian
Slakoth Azumarill
Persian Silcoon
Flareon Grumpig
Wailord Forretress
Forretress Flareon
Poochyena Grumpig
Electrode Marshtomp
Dunsparce Poochyena
Dragonair Electrode
Tyrogue Sandslash
Weezing Bulbasaur
Gyarados Silcoon
Starmie Sceptile
```

Sample Output 0

```
6
```

Explanation 0

Starting from Squirtle, one ball follows the path

Squirtle ~~~ Psyduck ~~~ Dragonair ~~~ Electrode ~~~ Marshtomp ~~~ Machoke (and repeat).

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