Bloomberg
CODECON

Memory Limit: 1024 MB
Time Limit: 5 s

Solitaire (400 points)

Introduction

While sitting and playing **solitaire**, you decide that you'd rather write your own solitaire game than play cards. So you whip out your laptop and get cracking.For your game, you have one deck of cards, part of which you put in a pile, and the others you discard. You also make one playing stack.

In order to **win** the game, you go through each of the cards in the deck, and see if you can put them on your stack. If you can, you do. If you cannot, you put that card at the bottom of your deck. If you can put your **entire deck** on the stack, then you win.

The **rules** for putting cards onto the stack are this:

The first card must be a king.

After that, you must put cards in decreasing rank, alternating colors. So, if you have a King of Spades (a black card), you can only put a Queen of Hearts or a Queen of Diamonds on top of it (red cards). In case you forgot, the two black suits are spades and clubs. The two red suits are hearts and diamonds.

The rank of cards in descending order are:
King, queen, jack, 10, 9, 8, 7, 6, 5, 4, 3, 2, ace

To symbolize a card, you print the first letter of the suit, followed by the first letter of the rank, or the digit representation.

The suits are represented as:

- h for hearts
- d for diamonds
- s for spades
- c for clubs

The ranks in descending order are:

k, q, j, 10, 9, 8, 7, 6, 5, 4, 3, 2, a

Thus, for example, all of the hearts would be printed like this:
hk, hq, hj, h10, h9, h8, h7, h6, h5, h4, h3, h2, ha.

To play the game, you get the deck ordering as the input, and you output how many times you needed to look through the deck in order to win, or print out *you lose* if it's not possible to win.

Input Specifications

Your program will take:

- A number **N** denoting the number of cards in your deck (**1 < N < 52**)
- This will be followed by **N** card representations, one on each line, in the format specified above.

Output Specifications

Based on the input,

- Print out the number of times you need to look through the deck in order to win or
- **you lose** if it's not possible to win

Sample Input/Output

Input

```
2
hk
sq
```

Output

```
1
```

Explanation

In one round, the red king is followed by the black queen, and the deck is finished.

Input

```
2
hk
dq
```

Output

```
you lose
```

Explanation

Two red cards can't win.