

Problem H: Pet Rivalry

Bored while waiting for their owner to get back home, the cat and the dog decided to start a game of cards. They often argue about which one of them is the coolest pet in the world. In order to raise the stakes of the game, they settle to declare the winner *Pet of the Year*. Because it is winter and very cold, the cat (having no doubt she will win) suggests the loser also has to live outside until spring. For the rest of us, this game will settle all the disputes on the internet on whether cats or dogs are better.

Their game is very simple: they both draw one card and the winner is whoever has the card with higher value.

Seeing that the stakes of the game are so high and hoping to prove to your friend (who always bugs you with cat pictures) that dogs are better, you decide to help them determine who the winner is. After all, they are just a cat and a dog, and have no idea about numbers...



The dog doesn't stand a chance!



If I lose, I must sleep outside.

Input

The input consists of one line with two characters d and c , the cards drawn by the dog and the cat, respectively.

The cards are guaranteed to be distinct (they may only be a cat and a dog, but they don't need a human to figure out whether two cards are equal).

The possible card values (from lowest to highest) are:

2, 3, 4, 5, 6, 7, 8, 9, t (for 10), j (for Jack), q (for Queen), k (for King) and a (for Ace).

Output

For each game output the winner: `cat` or `dog`.

Sample Input 1

5 6

Sample Output 1

cat

Sample Input 2

5 a

Sample Output 2

cat

Sample Input 3

6 5

Sample Output 3

dog

Sample Input 4

8 j

Sample Output 4

cat

Sample Input 5

q 7

Sample Output 5

dog

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