4130 P2P Currency Service

The *Exotica* travel agency specializes in organizing foreign holiday trips. *Exotica* want to provide a new service of supplying cash to its customers, before the start of their holidays, in the currency of their destination. Towards that goal, the agency introduced a new P2P (peer-to-peer) currency trading model that allows it to provide this service without taking financial risks or maintaining an inventory of exotic currencies.

The proposed P2P model is based on creating an Internet site for its customers to send their currency trading requests. *Exotica* task is limited to the identification of pairing compatible requests, and then putting the two customers in touch to negotiate a mutually agreeable exchange rate. Your task is to write a program that identifies the largest number of pairings among the received requests. *Exotica* want to discourage commercial trading operators from infiltrating the service, and require that the system restricts each customer to a single trade.

You are being asked to write a program that reads the currency trading requests, then calculates the largest number of possible pairings between them with the constraints that

1. each customer is restricted to a single trade, and

2. no customer is allowed to trade with himself or herself (as shown in the Sample Output below)

Input

The first line of the input contains a positive integer that represents the number of trading rounds that follow.

Each round description consists of "$1 + n$" lines. The first of the "$1 + n$" lines contains one integer, n, which represents the number of currency exchange requests to be processed, where $2 \leq n \leq 300$. Each currency exchange request, which is given in a separate line, contains the name of a customer given as a character string of length between 2 and 10, inclusive, characters without any white (space, tab . . .) characters, the names of two currencies given as strings. The first currency string represents the available currency and the second currency string represents the required currency, with each string containing no more than 5 characters without any white characters. The strings are separated by single spaces.

Output

For each round of trade, the output is a single line that contains the maximum number of possible customer pairings given as an integer.

Sample Input

```
2
7
Alice USD EUR
Bruce CNY USD
Bruce CNY EUR
MingLi CNY EUR
Bruce EUR USD
MingLi EUR CNY
```

```
Li EUR CNY
2
Bruce EUR USD
Bruce USD EUR
```

Sample Output

```
2
0
```