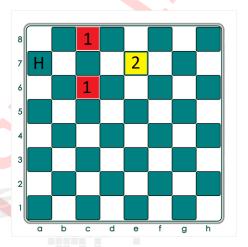


# Desperate Horse

Lili was playing chess with Jojo. Then, Jojo gave Lili a challenge, which was to find out the minimum steps required by a Knight from  $(x_1, y_1)$  to  $(x_2, y_2)$ .



Help Lili find out the minimum steps of the knight to reach  $(x_2, y_2)$  from  $(x_1, y_1)$ .

You are encouraged to use recursive techniques to solve this problem.

### Format Input

Input consists of 1 integer T indicating number of testcase and followed by T row after. For each test case contains  $(x_1, y_1)$  and  $(x_1, y_1)$ , the start point and the final point (coordinates). The coordinates will be expressed in letter and number form (e.g. A5, A2, C1).

### Format Output

Output should be expressed in format "Case #X: Y" - X is number of testcase and Y is the minimum steps needed to get to the destination.

#### Constraints

- $1 \le T \le 10$
- $A \leq x_1, x_2 \leq H$
- $1 \le y_1, y_2 \le 8$

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#### Sample Input (standard input)

2 A7 E7 A1 B3

## Sample Output (standard output)

Case #1: 2 Case #2: 1

### Explanation

On case 1, the knight can move to the red tile with 1 step, and can go easily to the yellow tile only in 1 final step. Thus, the minimum number of steps needed is 2.

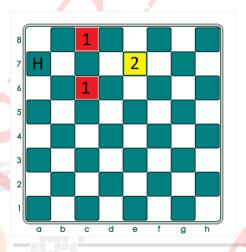


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## Desperate Horse

Lili sedang bermain catur dengan Jojo. Kemudian Jojo memberi tantangan kepada Lili, yaitu untuk mencari tahu langkah minimum yang dibutuhkan oleh suatu kuda dari  $(x_1, y_1)$  ke  $(x_2, y_2)$ .



Bantulah Lili dalam mencari tahu berapa langkah kuda tersebut untuk menuju ke  $(x_2, y_2)$  dari  $(x_1, y_1)$ .

Anda disarankan untuk menggunakan teknik rekursif untuk menyelesaikan masalah ini.

#### Format Input

Input terdiri dari 1 buah angka bulat T yang menyatakan jumlah testcase dan diikuti oleh T baris. Pada tiap kasus, terdiri dari dua buah koordinat  $(x_1, y_1)$  dan  $(x_2, y_2)$ , koordinat dari kuda dan koordinat tujuan kuda tersebut. Koordinat akan dinyatakan dalam huruf dan angka (contoh: A5, A2, C1).

### Format Output

Output yang dikeluarkan dalam format "Case #X: Y" - X merupakan nomor testcase dan Y merupakan langkah minimal yang dibutuhkan untuk sampai ke tujuan.

#### **Constraints**

•  $1 \le T \le 10$ 

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- $A \le x_1, x_2 \le H$
- $1 \le y_1, y_2 \le 8$

## Sample Input (standard input)

2 A7 E7

A1 B3

### Sample Output (standard output)

Case #1: 2 Case #2: 1

#### Explanation

Pada kasus pertama, kuda dapat bergerak ke kotak yang berwarna merah dengan 1 langkah, berikutnya dapat bergerak ke tujuan akhir. Sehingga jumlah langkah minimal yang dibutuhkan adalah 2.



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