Levenshtein Distance

Levenshtein distance is a string metric for measuring the difference between two sequences. The distance between two words is the minimum number of single-character edits (i.e. insertions, deletions, or substitutions) required to change one word into the other. The formula is as follows:

$$\operatorname{lev}_{a,b}(i,j) = \begin{cases} \max(i,j) & \text{if } \min(i,j) = 0, \\ \min \begin{cases} \operatorname{lev}_{a,b}(i-1,j) + 1 \\ \operatorname{lev}_{a,b}(i,j-1) + 1 \\ \operatorname{lev}_{a,b}(i-1,j-1) + 1_{(a_i \neq b_j)} \end{cases} & \text{otherwise.} \end{cases}$$

Format Input

The first line consists of single integer K which denotes the number of cases. The second line consists of K lines of two string N and M separated by a space; stating the given value of Levenshtein distance.

Format Output

Output the calculation of Levenshtein distance with a format "Case #K: X"; where K is the number of case and X is the distance value.

Constraints

- $1 \leq K \leq 5$
- $3 \leq |N|, |M| \leq 10$

Sample Input 1 (standard input)

```
5
turing turing
bag bay
stay play
binus university
feliz django
```

Sample Output 1 (standard output)

```
Case #1: 0
Case #2: 1
Case #3: 2
Case #4: 8
Case #5: 6
```

Levenshtein Distance

Levenshtein distance adalah metrik string untuk mengukur perbedaan antara dua rangkaian karakter. Jarak antara dua kata adalah jumlah minimum dari edit satu karakter (contoh. insert, delete, atau substitusi) yang diperlukan untuk mengubah satu kata ke kata lain. Rumusnya sebagai berikut:

$$\operatorname{lev}_{a,b}(i,j) = \begin{cases} \max(i,j) & \text{if } \min(i,j) = 0, \\ \min \begin{cases} \operatorname{lev}_{a,b}(i-1,j) + 1 \\ \operatorname{lev}_{a,b}(i,j-1) + 1 \\ \operatorname{lev}_{a,b}(i-1,j-1) + 1_{(a_i \neq b_j)} \end{cases} & \text{otherwise.} \end{cases}$$

Format Input

Baris pertama terdiri dari bilangan bulat K yang menunjukkan jumlah kasus. Baris kedua terdiri dari K baris yang berisi 2 string N dan M dipisahkan oleh spasi; menyatakan nilai yang diberikan oleh fungsi Levenshtein distance.

Format Output

Output hasil kalkulasi dari Levenshtein distance dengan format "Case #K: X"; dimana K adalah nomor kasus dan X adalah nilai Levenshtein distance.

Constraints

- $1 \leq K \leq 5$
- $3 \leq |N|, |M| \leq 10$

Sample Input 1 (standard input)

```
5
turing turing
bag bay
stay play
binus university
feliz django
```

Sample Output 1 (standard output)

```
Case #1: 0
Case #2: 1
Case #3: 2
Case #4: 8
Case #5: 6
```