

Colsum

Jojo have a table with $N \times N$ size. Every table have its own integer value in it. Jojo wants to know the sum from each column. Jojo is bad at mathematics so he ask you to help him.

Format Input

Input start with integer T, the number of test cases. Each test case start with number N, the size of Jojo table. Then there will followed by N lines, each line with N integer.

Format Output

Each case starts with "Case #X:", where X is the test case number starting at 1, then followed by N integers separated with a single space, the i-th integer will describe the sum from column i.

Constraints

- $1 \le T \le 10$
- $1 \le N \le 500$
- It is guaranteed that the value in the table will always be between -1000 and 1000.

Sample Input 1 (standard input)

```
3
2
1 2
3 4
3
3 3 3
2 2 2
1 1 1 1
4
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
```

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Sample Output 1 (standard output)

Case #1: 4 6
Case #2: 6 6 6
Case #3: 28 32 36 40

Sample Input 2 (standard input)

```
3
1
10
3
-3 -2 -1
-1 -2 -3
-2 -1 -3
1
0
```

Sample Output 2 (standard output)

Case #1: 10 Case #2: -6 -5 -7 Case #3: 0

Note

• There are no trailing spaces in each line.

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Jojo mempunyai sebuah tabel dengan ukuran $N \times N$. Setiap sel pada tabel berisi sebuah angka. Jojo ingin mengetahui jumlah dari angka-angka pada setiap kolom. Jojo tidak begitu ahli dalam bidang matematika dan meminta Anda untuk membantunya.

Format Input

Baris pertama berisi sebuah bilangan bulat T, jumlah kasus uji. Setiap kasus uji dimulai dengan bilangan bulat N, yaitu ukuran tabel Jojo, dan diikuti oleh N baris berikutnya yang berisi N bilangan bulat.

Format Output

Setiap kasus uji akan dimulai dengan "Case # X:", di mana X adalah nomor kasus uji mulai dari 1, kemudian diikuti oleh N bilangan bulat yang dipisahkan oleh spasi, bilangan bulat ke-i menunjukkan hasil penjumlahan setiap angka pada kolom ke-i.

Constraints

- $1 \le T \le 10$
- $1 \le N \le 500$
- Dapat dipastikan setiap angka pada tabel memiliki nilai antara -1000 dan 1000.

Sample Input 1 (standard input)

```
3
2
1 2
3 4
3
3 3 3
2 2 2
1 1 1
4
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
```

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Sample Output 1 (standard output)

Case #1: 4 6
Case #2: 6 6 6
Case #3: 28 32 36 40

Sample Input 2 (standard input)

3 1 10 3 -3 -2 -1 -1 -2 -3 -2 -1 -3 1 0

Sample Output 2 (standard output)

Case #1: 10 Case #2: -6 -5 -7 Case #3: 0

Note

• Tidak ada spasi setelah angka terakhir.

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