Puzzle

Vangelis the bear and his older brother Mitsos got bored of Sudoku and so decided to create a logic-based, combinatorial, number-placement puzzle of their own to play. The game they created is quite simple:

1.         One of the bears, shuffles a series A of N consecutive and unique numbers (where 0 < N <= 20.000 and  0 < Ai <= N)

2.         Creates 5 copies of the series and with each copy:

             a.        Takes a random number, that was never moved in a previous copy, and moves it to a random location

3.         The 5 variations are then given to the second bear, which is asked to retrieve the original sequence.

Notes: Sometimes a variation could be exactly the same as the original series.

Task

Your task is to calculate the original series after receiving the 5 copies.

Input Format

Your program will read 5\*N+1 lines.

The first line will contain number N.

Lines 2..N+1: each will contain one number that belongs to the first copy

Lines N+2..2\*N+1: each will contain one number that belongs to the second copy

Rest of the lines: similar.

Output Format

Your program should print the original series, one number per line.

Example

Input

5

5

4

1

3

2

4

5

1

3

2

1

5

4

3

2

3

5

4

1

2

2

5

4

1

3

Output

5

4

1

3

2

Details

In the above example, the original series is 5,4,1,3,2.

The 5 copies are the following:

·           5,4,1,3,2 -- number 5 was moved to position 1

·           4,5,1,3,2 -- number 4 was moved to position 1

·           1,5,4,3,2 -- number 1 was moved to position 1

·           3,5,4,1,2 -- number 3 was moved to position 1

·           2,5,4,1,3 -- number 2 was moved to position 1