Problem I. Izhevsk Training Camp

Input file:	*standard input*
Output file:	*standard output*
Time limit:	5 seconds
Memory limit:	256 mebibytes

Izhevsk Training Camp is about to begin! This season n teams numbered with consecutive integers from 1 to n will take part in this event. Nine sophisticated contests will be offered to participating teams in eleven days period. Contest are numbered with consecutive integers from 1 to 9. Three of these contests will form the Udmurtia Head Super Cup (UHSC). The question is: what three contests to choose for UHSC?

Oleg is helping to hold the Izhevsk Training Camp. For any contest he knows in advance what place each of the n teams will take in this contest. He wants to use his knowledge to select three contests in order to minimize the total *boredom* of UHSC.

The *boredom* of UHSC can be computed as number of pairs of teams $\{i, j\}$ such that team i won team j in each of three UHSC contests.

You are to write a program that will help Oleg to find three contests a, b and c for UHSC such that the total *boredom* of UHSC is minimum possible.

Input

The first line of input contains an integer n — the number of participating teams ($2 \le n \le 2^{16}$).

The i-th of the following nine lines contains the i-th contest description: n unique positive integers from 1 to n — team numbers ordered from the first place to the last.

Output

The only line of output should contain three positive integers a, b and c — numbers of contests to choose for UHSC ($1 \le a, b, c \le 9$, $a \ne b, a \ne c, b \ne c$).

If there are multiple correct answers — output any of them.

Example

standard input	standard output
7 1 2 3 4 5 6 7 1 2 4 5 3 7 6 1 3 2 5 7 6 4 1 2 3 4 5 7 6 1 2 3 4 5 6 7 2 1 3 4 5 6 7 7 1 2 3 4 5 6 5 4 1 3 6 7 2 1 2 4 5 3 6 7	3 7 8

Note

For the sample test case the minimum possible value of *boredom* is 5.