Misdeed -la bonté de Dieu et l'origine du mal-

Input file:	`standard input`
Output file:	`standard output`
Time limit:	5 seconds
Memory limit:	1024 megabytes

This is a two-step problem.

Tairitsu and Chunipenguin join forces to overcome the Trial of Karma. The Trial of Karma is structured as follows.

1. Tairitsu receives a binary sequence S of length 196. Subsequently, Tairitsu constructs a 13×13 matrix A where each element is between 0 and 15.
2. The Trial of Karma involves selecting positive integers $1 \le r_1 < r_2 < \ldots < r_7 \le 13$ and $1 \le c_1 < c_2 < \ldots < c_7 \le 13$. Then create a 7×7 matrix B such that the ith row and jth column of B is A_{r_i,c_j}. Chunipenguin is given this matrix B and the values $r_1, r_2, \ldots, r_7, c_1, c_2, \ldots, c_7$.
3. Chunipenguin must determine S by examining B.

Let's help Tairitsu and Chunipenguin overcome the trials of karma!

Input

The first line contains an integer t that is either 0 or 1. If $t = 0$, it means you must execute Tairitsu's strategy; if $t = 1$, it means you must execute Chunipenguin's strategy.

If $t = 0$, the next line contains 196 integers, either 0 or 1, given without spaces. This represents the binary sequence S received by Tairitsu.

If $t = 1$, a total of 7 positive integers are given over two lines. The ith integer on the first line is r_i, and the ith integer on the second line is c_i.

Subsequently, over the next 7 lines, 7 integers are given per line, separated by spaces. The jth element on the ith line represents B_{ij}.

Output

If $t = 0$, the program must output a total of 13 lines, each containing 13 numbers separated by spaces, where the jth element on the ith line represents A_{ij}.

If $t = 1$, the program must output a total of 196 integers, either 0 or 1, on a single line without spaces. This must be the binary sequence S that Tairitsu initially received.

Examples

`standard input`	`standard output`
0 000...000	0 0
1 1 2 3 4 5 6 7 1 2 3 4 5 6 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000...000