

New iPad

The new iPad is here, with retina display. It has more resolution than iPad2. Because for each pixel in iPad2 exists 4 pixels in new iPad. That means that the new iPad has twice width and twice height.

With this new resolution we need change some icons' sizes. But we don't have time for create new images. We only change the black and white images. Create another image that is 4 pixels for each pixel of the old image.

Input

The input consists in multiple test cases.

Each test case begins a line containing an integer number "N" ($1 \leq N \leq 50$) the width and height of the icon. In the following "N" lines are "N" characters for line. The characters '1' means black pixels and '0' means white pixels.

The end of input is indicated by a line with one zero. This is not a part of any test cases.

Output

For each test case print a $(N+N) \times (N+N)$ matrix representing the new icon with the new resolution for the new iPad.

Example

Input:

```
4
1000
1011
1000
1111
2
10
01
0
```

Output:

```
11000000
11000000
11001111
11001111
11000000
11000000
11111111
11111111
1100
1100
0011
0011
```