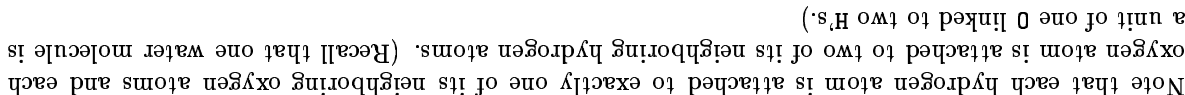


Square ice is a two-dimensional arrangement of water molecules O_2H , with oxygen at the vertices of

5 × 5 example is shown below.



encoded as 0. So, the above pattern would be encoded as:

An ASM is a square matrix with entries 0, 1 and -1, where the sum of each row and column is 1 and the non-zero entries in each row and in each column must alternate in sign. (It turns out there is a one-to-one correspondence between ASM's and square ice patterns!)

vertical bar.

Input consists of multiple cases. Each case consists of a positive integer m (≤ 11) on a line followed

single space. The end of input is indicated by a line containing $m = 0$.

Output

For each case, print the case number (starting from 1), in the format shown in the Sample Output, followed by a blank line, followed by the corresponding square ice pattern in the format described above. Separate the output of different cases by a blank line.

Sample Input

```
2
0 1
1 0
4
0 1 0 0
1 -1 0 1
0 0 1 0
0 1 0 0
0
```

Sample Output

Case 1:

```
*****
*H-O-H-O-H*
*      |      *
*  H    H    *
*      |      *
*H-O-H-O-H-O-H*
*      |      *
*  H    H    H  *
*      |      *
*H-O-H-O-H-O-H*
*      |      *
*  H    H    H  *
*      |      *
*H-O-H-O-H-O-H*
*****
```

Case 2:

```
*****
*H-O-H-O-H-O-H*
*      |      *
*  H    H    H  *
*      |      *
*H-O-H-O-H-O-H-O-H*
*      |      *
*  H    H    H  *
*      |      *
*H-O-H-O-H-O-H-O-H*
*      |      *
*  H    H    H  *
*      |      *
*H-O-H-O-H-O-H-O-H*
*****
```