Panda puzzle P65199_en

Consider the puzzle to the right. We only have the sixteen 2×2 pieces shown, which we can place and rotate as we wish, as long as the board gets totally covered. There is just one restriction: Adjacent pieces must share the colors at the edges (white with white, black with black).

The puzzle has more than 40 thousand solutions. To order them, we construct a word from every solution, and we sort the words alphabetically. Suppose that we visit a solution by rows, from top to bottom, and each row from left to right. If we write an 'a' for every white square, and a 'b' for every black square, we get a word with 64 chars. For the solution in the image, the word is

"baabbbbabbbaabbabbbbaabbabbbbbbaaabbbbbbaaabaaaaaaaabaaaaaaaabaabbbbba".

Input

Input consists of several natural numbers i, each one between 1 and 43616.

Output

For every i, print the i-th solution to the puzzle. Use '.' for white squares and 'X' for black squares. Print a line with 10 dashes at the end of each solution.

Sample input 1

```
31057
1
2
43616
```

Sample output 1

```
X..XXXX.
XXX..XX.
XXX..XX.
XXXXX...
XXXXX...
X.......
X.......
X..XXXX.
----------
........
...XX..X
...XX..X
.XX..XXX
.XX..XXX
.XX..XXX
.XX..XXX
.XXXXXX.
----------
........
...XX..X
...XX..X
.XX..XXX
.XX..XXX
.XXXXXXX
.XXXXXXX
.XX.....
----------
XXXXXXXX
XXX..XX.
XXX..XX.
X..XX...
X..XX...
X..XX...
X..XX...
X......X
----------
```

Problem information

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