

Straight Line Spiral Pattern (Act 3)

Print a straight line spiral pattern as shown in the example below. Please use the * (asterisk) and . (dot) characters.

Input

You are given t - the number of test cases and for each of the test cases one integer: s , $3 < s < 100$ - the size of the shape.

Output

For each of the test cases output the requested pattern. Use one line break in between successive patterns.

Example

Input:

```
5
4
5
11
13
78
```

Output:

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