Cover a square with rectangles P69283_en

Suppose that you have an infinite suply of $m \times 2m$ rectangles for every natural $m \geq 1$. You have to exactly cover an $\ell \times \ell$ square (you can choose ℓ) by placing n of those rectangles horizontally or vertically. For instance, these are some ways for $n = 2$, $n = 5$ and $n = 6$:

There are only a few n for which it is impossible to cover a square with n such rectangles. In particular, it is always possible when $n\%3 = 2$. Can you prove it?

Input

Input consists of several n such that $n \equiv 2 \pmod 3$. Assume $2 \leq n \leq 62$.

Output

For every n, first print a line with an ℓ between 2 and 30. Afterwards, print ℓ lines with ℓ characters each. Use different digits, lowercase letters and uppercase letters to indicate each rentangle. Since there are multiple possible solutions, print any one.

Sample input 1

```
2
2
14
```

Sample output 1

```
2
00
11
6
ZZZaaa
ZZZaaa
ZZZaaa
ZZZaaa
ZZZaaa
ZZZaaa
8
C3POjj42
C3POdd42
BBBBBBBB
BBBBBBBB
BBBBBBBB
BBBBBBBB
T1111XX5
T1111YY5
```

Problem information

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