COCI '11 Contest 6 #4 Rez

Time limit: 1.0s   **Memory limit:** 32M

Let's say that there exists a huge cake made from blueberries, strawberries and chocolate. It's shaped like a square, and has area of 100 square meters. Professionals strongly advise that cake is being cut with wet knife and eaten with dry spoon. Also:

- Every cut begins and ends on the cake's perimeter
- A cut cannot lie completely on one of the sides
- No two cuts have the same starting and ending points, i.e. all cuts are different

Parts obtained by these cuts are separated and counted only after last cut has been made. During cutting, the cake keeps its square form.

At least how many cuts need to be made in order to obtain **at least** K **parts**? Exactly what cuts to make?

Input Specification

The first and only line of input contains an integer K $(1 \leq K \leq 1\,000\,000)$, minimum number of parts that we must have after cutting is done.

Output Specification

The first line of output should contain the requested number of cuts, N.

The following N lines should have four integers each, coordinates of starting and ending point for each cut made. Coordinates are represented in millimeters, and opposing corners of the cake have coordinates $(-5000, -5000)$ and $(5000, 5000)$. So for each point (x, y) lying on the side of the square, the following will hold: $\max(|x|, |y|) = 5000$.

Scoring

If only the number of cuts N is correct, you will get 50% of the points for that test case.

Sample Input 1

```
1
```

Sample Output 1

```
0
```

Sample Input 2

```
4
```

Sample Output 2

```
2
-5000 -5000 5000 5000
5000 -5000 -5000 5000
```

Sample Input 3

```
7
```

Sample Output 3

```
3
-5000 5000 0 -5000
-2000 -5000 5000 5000
-5000 0 5000 0
```