

## Problem J2 - Picture Perfect

Roy has a stack of student yearbook photos. He wants to lay the pictures on a flat surface edge-to-edge to form a filled rectangle with minimum perimeter. All photos must be fully visible. Each picture is a square with dimensions 1 unit by 1 unit.

For example, he would place 12 photos in the following configuration, where each photo is indicated with an X

```
XXXX
XXXX
XXXX
```

Of course, he could orient them in the other direction, such as

```
XXX
XXX
XXX
XXX
```

which would have the same perimeter, 14 units.

Your problem should be interactive. It should repeatedly read a positive integer  $C$ , the number of pictures to be laid out. For each input, it should print the smallest possible perimeter for a filled rectangle that is formed by laying all the pictures edge-to-edge. Also print the dimensions of this rectangle.

You may assume that there are less than 65,000 photos. An input value of  $C = 0$  indicates that the program should terminate.

### Sample Session *User input in italics*

```
Enter number of pictures:
  100
Minimum perimeter is 40 with dimensions 10 x 10

Enter number of pictures:
  15
Minimum perimeter is 16 with dimensions 3 x 5

Enter number of pictures:
  195
Minimum perimeter is 56 with dimensions 13 x 15

Enter number of pictures:
  0
```