

Given the value of an n you will have to find the modulo 100000000 value of the following expression:

$$\lfloor \sqrt{1} \rfloor + \lfloor \sqrt{3} \rfloor + \lfloor \sqrt{5} \rfloor + \dots + \lfloor \sqrt{2i-1} \rfloor + \dots + \lfloor \sqrt{m} \rfloor,$$

where m is the largest odd number not greater than n .

Or in other words you will have to find the value of S where,

$$S = (\lfloor \sqrt{1} \rfloor + \lfloor \sqrt{3} \rfloor + \lfloor \sqrt{5} \rfloor + \dots + \lfloor \sqrt{m} \rfloor) \bmod 100000000$$

Input

The input file contains at most 30000 lines of inputs. Each line contains a single 64-bit signed integer which denotes the value of n . Input is terminated by a line containing a single zero which should not be processed.

Output

For each line of input produce one line of output. This line contains the value of S .

Sample Input

```
9
19
29
10000000
0
```

Sample Output

```
9
26
49
38426378
```