**1035 - Sqrt Log Sin**

**Description**

An evil professor has just assigned you the following problem.  
A sequence is defined by the following recurrence:

http://coj.uci.cu/images/problemas/ejercicio1494a.png

Determine **X**1000000.

**Input specification**

Input consists of a number of lines, each containing one integer, a value of **i**, no less than zero and no greater than one million. Input is followed by a single line containing the integer -1. This last line is not a value of i and should not be processed.

**Output specification**

For each value of i in the input (but not the final -1), output the corresponding value of **X**i mod **1000000**.

**Sample input**

0  
90  
-1

**Sample output**

1  
8347

**Hint(s)**

|  |  |
| --- | --- |
| Statistics | **sub:**[1212](http://coj.uci.cu/24h/status.xhtml?abb=1035)| **ac:**[431](http://coj.uci.cu/24h/status.xhtml?abb=1035&status=ac)|**ac%:** 35,56 |**score:** 0,49 |
| Created by | Waterloo Local Contest 2009 October 3 (Malcolm Sharpe) |
| Added by | [ejaltuna](http://coj.uci.cu/user/useraccount.xhtml?username=ejaltuna) |
| Addition date | 2011-10-12 |
| Time limit (ms) | 1000 |
| Memory limit (kb) | 131072 |
| Output limit (mb) | 64 |
| Size limit (bytes) | 100000 |
| Enabled languages | C | C# | C++ | Java | Pascal | Perl | PHP | Python | Ruby | Text |