Problem 123: Mayan Math

Difficulty: Medium

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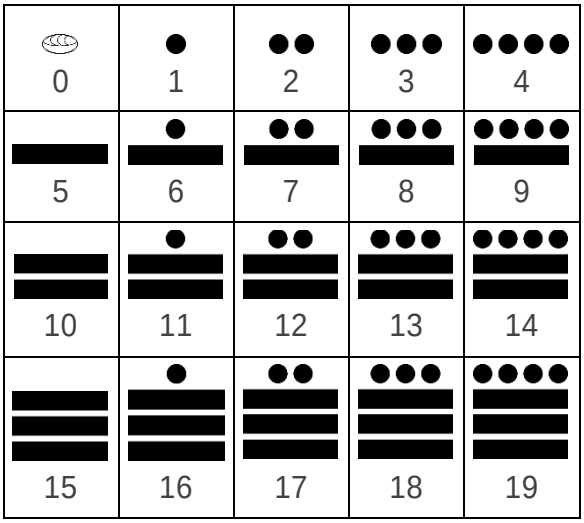
Problem Background



Today, many people use Arabic numerals to represent numbers - 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. This is a base-10 system; moving from right to left, each digit in a number represents a value ten times greater than the digit before it. However, many different number systems exist; for example, your computer uses a binary (base-2) system to store data. Today, we'll look at a base-20 system used by the ancient Mayans of Central America.

The Mayans used a series of dots and lines to represent numbers. Each dot represented a value of 1, and each line represented a value of 5. For example, three dots and one line represented the number 8 (5 for the line, plus 1 for each dot). This pattern was used to represent numbers from 1 (one dot) through 19 (four dots and three lines). The number 0 was represented with a picture of a shell.

To count beyond 19, Mayans would stack numbers on top of one another. The number 20 was represented by a single dot - now representing 20 - drawn over a shell icon (still representing 0). 21 was drawn as two dots stacked on top of each other. For numbers less than 400, the upper number was multiplied by 20 and added to the lower number to get the total value of the number. For numbers between 400 and 7,999 (inclusive), three numbers would be stacked; the top most number multiplied by 400, the middle by 20, and the bottom number by 1.

For example, the number 1,234 would be written with three stacked numerals, as follows:

Three dots, representing 3 * 400 = 1200

One dot, representing 1 * 20 = 20

Four dots and two lines, representing 14 * 1 = 14

Adding these numbers yields the result of 1,234.

400's	●●●	3 x 400 = 1,200
20's	●	1 x 20 = 20
1's	●●●● ▬▬	14 x 1 = 14
Total		1,234

Problem Description

Your task is to convert base-10 Arabic numbers to base-20 Mayan numbers. Since your computer can't write dots, lines, or shell icons in the format shown in the images above, we will use periods, dashes, and zeroes in their place.

Dots will be represented with periods. For example, the number 3 (three dots) would be written as ...

Lines will be represented with dashes. If a numeral contains dots and lines, the dots should be written first. For example, 12 (two dots and two lines) should be written as ..--

Shell icons will be represented with a 0 (zero).

If a number requires multiple stacked numerals, print them in order from top to bottom, separating each numeral with a single space.

Sample Input

The first line of your program's input, received from the standard input channel, will contain a positive integer representing the number of test cases. Each test case will consist of a single line containing a non-negative integer less than 160,000.

```
3
12
168
2019
```

Sample Output

For each test case, your program must output a single line containing a representation of the Mayan number equal to the value of the given integer, using the format described above.

```
..--
...- ...-
- 0 ....---
```