# Long Floating Point

(Time Limit: 1 second)

**Problem Description**

* **English**

A "long integer" is an integer with a long-long length. A "long floating point" is a floating point with a long-long length. But they are very different. First, there are countable infinite long integers, but there are uncountable infinite long floating points. Second, there is no long integer with an infinite length, but there exists a long float point with an infinite length.

Consider a long floating point with a finite length or with a repeating section (repeating decimal). For example, the shortest repeating decimal of is . Moreover, we can express the long floating point in different bases. We can express in decimal and in binary. So the shortest length of repeating section of is 1 in decimal and 2 in binary.

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| You are ask to calculate the shortest length of repeating section of the long floating point in base "**b**", where a, b, and c are integers. |

Take a=1, b=2, c=1 as an example, the number is . So in base "b", the length of repeating section is 2, or 4. But the smallest one is 2. In base "b", if the long floating point has a finite length expression, then the shortest length of repeating section is zero.

**Technical Specification**

**Input Format**

There are several rows. Each row has a test case. Each test case has the values of a, b, and c.

**Output Format**

For each test case in each row, output a row containing the shortest length of repeating section of in base ‘b’.

**Example**

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| **Sample Input:** | **Sample Output:** |
| 1 2 1↵  1 5 0↵  1 3 2↵  3 7 6↵  4 9 8↵ | 2↵  0↵  2↵  6↵  8↵ |