Fractal

Time Limit: 1 Second
Memory Limit: 256 MB

Fractal is a classic type of geometric shapes. A simple fractal can be obtained by the following steps:

1. Draw a line with length 1.

2. Repeat the following operations n times:
   For each line:

   (a) Divide the line into three segments of equal lengths.
   (b) Replace the middle segment with an equilateral triangle with the same size.
   (c) Erase the middle segment.

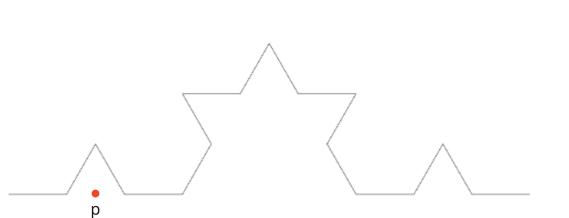A fractal obtained by repeating the procedure 2 times (denoted as 2nd-fractal) is as follows:

Figure 1: Sample input

Given the number of operations n and a point $p \in (0, 1]$ on the original line, determine if p lies on the n-th fractal.

Input

The first line contains a single integers n ($1 \le n \le 10^5$) - the number of operations.

The second line contains two integers a and b ($1 \le a \le b \le 10^6$), where $p = \frac{a}{b}$.

Output

Output YES if p lies on the n-th fractal, and NO otherwise.

Sample Inputs

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2
1 6
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Sample Outputs

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NO
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