Problem H
Periodic Sequence
Time Limit: 1 second

Given three integer numbers a, b, and x_0, we can define a sequence of numbers using the following recurrence equation:

$$x_{i+1} = a/x_i + b$$

If an infinite sequence x_0, x_1, x_2, x_3, x_4,… based on this formula only consists of integer numbers, it must be a periodic sequence.

Example: For $a = -10800$, $b = 180$, $x_0 = 30$, we have a periodic sequence: 30, −180, 240, 135, 100, 72, 30, … with the periodic length of 6.

Your task is to determine the maximum possible periodic length of an integer-number sequence based on the recurrence $x_{i+1} = a/x_i + b$, given only two integer numbers a and b.

Input

The input contains two integer numbers a and b, separated by a space ($-2^{30} \le a, b \le 2^{30}$).

Output

The output contains only one integer number K, the maximum periodic length, or 0 if there no integer-number sequence can be generated by the given recurrence equation.

Sample Input

Sample Input	Sample Output
-10800 180	6