<div align="center">

Problem H

Trees in a Wood.

Input: Standard Input
Output: Standard Output
**Time Limit:** 10 seconds

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Background

The saying ``You can't see the wood for the trees" is not only a cliche, but is also incorrect. The real problem is that you can't see the trees for the wood. If you stand in the middle of a wood, the trees tend to obscure each other and the number of distinct trees you can actually see is quite small. This is especially true if the trees are planted in rows and columns, because they tend to line up. The purpose of this problem is to find how many distinct trees one can see if one were standing on the position of a tree in the middle of the wood.

The Problem

For a mathematically more precise description we assume that you are situated at the origin of a coordinate system in the plane.

Trees are planted at all positions $(x,y) \in \mathbb{Z} \times \mathbb{Z} \setminus \{(0,0)\}$, with |x|<=a and |y|<=b.
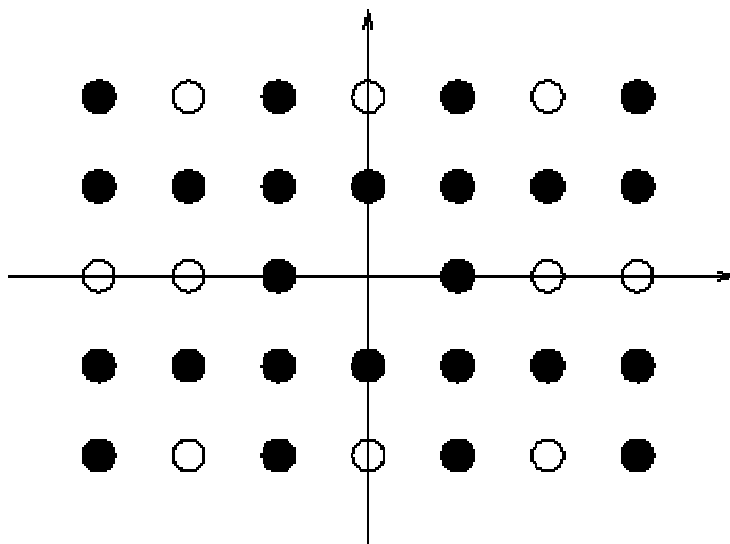
A tree at position (x,y) can be seen from the origin if there are no other trees on the straight line from (0,0) to (x,y). Find the number K of all the trees in the wood that can be seen from the origin and the number N of all the trees to compute the fraction $\frac{K}{N}$.

Hint: The Euler phi function $\varphi(n)$ is defined to be the number of integers m in the range $1 \leq m \leq n$ relatively prime to n:

$$\varphi(n) = \#\{m \mid 1 \leq m \leq n \text{ and } \gcd(m, n) = 1\} \quad (\gcd = \text{greatest common divisor})$$

Instead of counting (an adequate method for small n!) you could as well use the following identity:

$$\varphi(n) = n \prod_{p \in P, \, p \mid n} \left(1 - \frac{1}{p}\right), \quad P = \{p \in \mathbb{N} \mid p \text{ prime}\}$$

Hint: Remember that gcd(m,n)=gcd(m+n,n)=gcd(m+2n,n)=gcd(m+in,i)

You might be surprised that the fraction $\frac{K}{N}$ converges to $\frac{6}{\pi^2} \approx 0.607927$ for an infinitely large wood.

The Input

Each scenario consists of a line with the two numbers a and b (separated by a white space), with 1 <= a <= 2000 and 1 <= b <= 2000000 Input is terminated by a line with two zeros.

The Output

For each scenario print a line containing the fraction $\frac{K}{N}$ with a precision of 7 digits after the decimal point. Error less than 2e-7 or 2*10^(-7) will be tolerated.

Sample Input

```
3 2
0 0
```

Sample Output

```
0.7058824
```

Collected from TUD Programming Contest