

C. A Problem about Polyline

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

There is a polyline going through points $(0, 0) - (x, x) - (2x, 0) - (3x, x) - (4x, 0) - \dots - (2kx, 0) - (2kx + x, x) - \dots$.

We know that the polyline passes through the point (a, b) . Find minimum positive value x such that it is true or determine that there is no such x .

Input

Only one line containing two positive integers a and b ($1 \leq a, b \leq 10^9$).

Output

Output the only line containing the answer. Your answer will be considered correct if its relative or absolute error doesn't exceed 10^{-9} . If there is no such x then output -1 as the answer.

Examples

input
3 1
output
1.00000000000000

input
1 3
output
-1

input
4 1
output
1.25000000000000

Note

You can see following graphs for sample 1 and sample 3.