A. 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 $(0, 0) - (x, x) - (2x, 0) - (3x, x) - (4x, 0) - ...$ - $(2kx, 0) - (2kx + x, x) - ....$

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 $(1 \le a, b \le 10^9)$.

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
1.000000000000

input
1 3

output
-1

input
4 1

output
1.250000000000

Note

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