Elvis Presley

Input file: `standard input`
Output file: `standard output`
Time limit: 1 second
Memory limit: 256 mebibytes

Consider a possibly infinite directed graph $G = (V, E)$ without loops (that is, for each $(u, v) \in E$, $u \neq v$). Let's define its transitive closure $G^+ = (V, E^+)$ as the directed graph having the same set of vertices V such that its edges are all pairs (u, v) for which $u \neq v$ and there exists a finite path $u = p_0, p_1, p_2, \ldots, p_{k-1}, p_k = v$ such that $(p_{i-1}, p_i) \in E$ for all $i = 1, 2, \ldots, k$.

An antichain is a (possibly infinite) set $A \subseteq V$ such that, for any two distinct vertices $u, v \in A$, none of the two edges (u, v) and (v, u) are present in G^+.

Consider a set U and some property P defined for all its subsets (an example of a property defined for each subset $A \subseteq V$ is whether A is an antichain of the graph $G = (V, E)$). We say that subset $S \subseteq U$ is a *maximum* subset satisfying property P if its size $|S|$ (that is possibly equal to ∞) is maximum possible. We say that $S \subseteq U$ is a *maximal* subset satisfying property P if there exists no other subset T satisfying P such that $S \subsetneq T$, that is, S can't be extended to become a larger subset satisfying the same property. Note that those two definitions are different: if a maximum subset satisfying P exists and it is finite, it is obviously also maximal, but a maximal subset satisfying P may not be maximum.

We define *minimal* and *minimum* subsets satisfying some property P in a similar manner.

Let's define an EP-graph: $EP = (V_{EP}, E_{EP})$ such that its vertices are $V_{EP} = \mathbb{N} = \{1, 2, 3, \ldots\}$ and its edges are $E_{EP} = \{(v, 2v) : v \in \mathbb{N}\} \cup \{(v, 2v + 1) : v \in \mathbb{N}\}$.

You are given two distinct vertices a and b of V. Find a *minimum maximal* antichain in EP containing both a and b, or determine that there are no such antichains. If there are several possible answers, find any of them.

More formally:

$AC = \{A \subseteq V_{EP} : A \text{ is an antichain in } EP\}$.

$MaxAC = \{A \in AC : A \text{ is maximal}\}$.

$MinMaxAC = \{A \in MaxAC : |A| = \min\limits_{S \in MaxAC} |S|\}$.

Your task is to find any element of $MinMaxAC$.

Input

The first line of input contains two integers a and b ($1 \leq a, b \leq 10^9$, $a \neq b$).

Output

If there exists no minimum maximal antichain in EP containing both a and b, or if it is infinite, print -1. Otherwise, print elements of any minimum maximal antichain in EP containing both a and b in ascending order.

Examples

standard input	standard output
2 7	2 6 7
1 2	-1