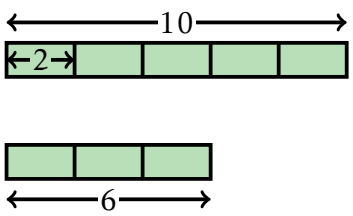
2.1.7 Greatest Common Divisor

Greatest Common Divisor Problem
Compute the greatest common divisor of two positive integers.

Input: Two positive integers a and b.
Output: The greatest common divisor of a and b.



The greatest common divisor GCD(a, b) of two positive integers a and b is the largest integer d that divides both a and b. The solution of the Greatest Common Divisor Problem was first described (but not discovered!) by the Greek mathematician Euclid twenty three centuries ago. But the name of a mathematician who discovered this algorithm, a century before Euclid described it, remains unknown. Centuries later, Euclid's algorithm was re-discovered by Indian and Chinese astronomers. Now, the efficient algorithm for computing the greatest common divisor is an important ingredient of modern cryptographic algorithms.

Your goal is to implement Euclid's algorithm for computing GCD.

Input format. Integers a and b (separated by a space).

Output format. GCD(a, b).

Constraints. $1 \le a, b \le 2 \cdot 10^9$.

Sample.

Input:

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28851538 1183019
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Output:

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17657
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$28851538 = 17657 \cdot 1634$, $1183019 = 17657 \cdot 67$.