

Algorithm: Euclidean Algorithm

Input: Two integers A and B

Output: Their greatest common divisor

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1: Initialize  $r \leftarrow a$ 
2: Initialize  $x \leftarrow 0$ 
3: while  $r \neq 0$  do
4:    $x \leftarrow a/b$ 
5:    $r \leftarrow a \% b$ 
6: end while
7: if  $r = 0$  then
8:   return  $b$ 
9: else
10:   $a \leftarrow b$ 
11:   $b \leftarrow r$ 
12: end if
13: return  $b$ 
```