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| The GCD (Greatest Common Divisor) of a pair of integers is the greatest positive integer that divides both integers exactly (no remainder). For example, the GCD of 24 and 60 is 12.Here is an algorithm to calculate the GCD: **Input** a, b **if** ( a < 0 ) //absolute value a 🡨 -a **if** ( b < 0 ) //absolute value b 🡨 -b **repeat while** b > 0 { r 🡨 a % b //remainder a 🡨 b b 🡨 r } **Output** a //the GCD is a |
| ***Euclidean GCD Algorithm*** |

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| --- | --- | --- | --- | --- |
|  | **a** | **b** | **r** | **a <> b** |
| ***Instructions*** | **?** | **?** | **?** | **?** |
| **Input** |  |  |  |  |
| **if ( a < 0 ) a = -a** |  |  |  |  |
| **if ( b < 0 ) b = -b** |  |  |  |  |
| **b > 0 true / false** |  |  |  |  |
| **r = a % b** |  |  |  |  |
| **a = b** |  |  |  |  |
| **b = r** |  |  |  |  |
| **b > 0 true / false** |  |  |  |  |
| **r = a % b** |  |  |  |  |
| **a = b** |  |  |  |  |
| **b = r** |  |  |  |  |
| **b > 0 true / false** |  |  |  |  |
| **r = a % b** |  |  |  |  |
| **a = b** |  |  |  |  |
| **b = r** |  |  |  |  |
| **b > 0 true / false** |  |  |  |  |
| **r = a % b** |  |  |  |  |
| **a = b** |  |  |  |  |
| **b = r** |  |  |  |  |
| **b > 0 true / false** |  |  |  |  |
| **r = a % b** |  |  |  |  |
| **a = b** |  |  |  |  |
| **b = r** |  |  |  |  |