

# Sherlock and GCD

Problem	Submissions	Leaderboard	Discussions	Editorial	Tutorial	
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## Greatest Common Divisor

The greatest common divisor (gcd) of two or more integers, when at least one of them is not zero, is the largest positive integer that divides the numbers without a remainder.

The GCD of more than two numbers can be calculated as

$$\text{GCD}(a,b,c) = \text{GCD}(\text{GCD}(a,b),c)$$

The most famous method of finding GCD is the Euclidean GCD Algorithm:

### Euclidean GCD Algorithm

```
int gcd(a, b) {
    while (b != 0) {
        t = b;
        b = a % b; \\ a mod b
        a = t;
    }
    return a;
}
```

Recursive version

```
int gcd(a, b) {
    if (b = 0)
        return a
    else
        return gcd(b, a mod b)
}
```

Related challenge for **Greatest Common Divisor**

Unfriendly Numbers

Success Rate: 30.02%   Max Score: 80   Difficulty:

Solve Challenge