

# 99 questions/Solutions/32

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(\*\*) Determine the greatest common divisor of two positive integer numbers. Use Euclid's algorithm.

```
gcd' 0 y = y
gcd' x y = gcd' (y `mod` x) x
myGCD x y | x < 0      = myGCD (-x) y
          | y < 0      = myGCD x (-y)
          | y < x      = gcd' y x
          | otherwise  = gcd' x y
```

The Prelude includes a gcd function, so we have to choose another name for ours. The function gcd' is a straightforward implementation of Euler's algorithm, and myGCD is just a wrapper that makes sure the arguments are positive and in increasing order.

A more concise implementation is:

```
myGCD :: Integer -> Integer -> Integer
myGCD a b
  | b == 0      = abs a
  | otherwise  = myGCD b (a `mod` b)
```

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