MODULE *Euclid*

EXTENDS *Integers*

$p \mid q \triangleq \exists\, d \in 1 \,..\, q : q = p * d$

$Divisors(q) \triangleq \{d \in 1 \,..\, q : d \mid q\}$

$Maximum(S) \triangleq \text{CHOOSE } x \in S : \forall\, y \in S : x \geq y$

$GCD(p,\, q) \triangleq Maximum(Divisors(p) \cap Divisors(q))$

$Number \triangleq Nat \setminus \{0\}$

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