```
---------------------------␣MODULE␣GCD␣---------------------------
EXTENDS␣Integers,␣FiniteSets,␣TLAPS,␣NaturalsInduction
␣
Divides(p,␣n)␣==␣\E␣q␣\in␣Int␣:␣n␣=␣p␣*␣q
␣
DivisorsOf(n)␣==␣{p␣\in␣Int␣:␣Divides(p,␣n)}
␣
SetMax(S)␣==␣␣CHOOSE␣i␣\in␣S␣:␣\A␣j␣\in␣S␣:␣i␣>=␣j
␣
GCD(m,␣n)␣==␣SetMax(DivisorsOf(m)␣\cap␣DivisorsOf(n))
␣
THEOREM␣GCD1␣==␣\A␣m␣\in␣Nat␣\␣{0}␣:␣GCD(m,␣m)␣=␣m
␣
THEOREM␣GCD2␣==␣\A␣m,␣n␣\in␣Nat␣\␣{0}␣:␣GCD(m,␣n)␣=␣GCD(n,␣m)
␣
THEOREM␣GCD3␣==␣\A␣m,␣n␣\in␣Nat␣\␣{0}␣:
␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣(n␣>␣m)␣=>␣(GCD(m,␣n)␣=␣GCD(m,␣n-m))
=============================================================
```

CLOSE