

```

-----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))
=====

```