```
-------------------------␣MODULE␣Euclid␣-------------------------
EXTENDS␣Integers
CONSTANTS␣M,␣N

ASSUME␣MNPosInt␣==␣/\␣M␣\in␣Nat␣\␣{0}
␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣/\␣N␣\in␣Nat␣\␣{0}

VARIABLES␣x,␣y

TypeOK␣==␣x␣\in␣Nat␣\␣{0}␣␣/\␣␣y␣\in␣Nat␣\␣{0}

Init␣==␣(x␣=␣M)␣␣/\␣␣(y␣=␣N)

Next␣==␣\/␣/\␣x␣>␣y
␣␣␣␣␣␣␣␣␣␣␣/\␣x'␣=␣x␣-␣y
␣␣␣␣␣␣␣␣␣␣␣/\␣y'␣=␣y
␣␣␣␣␣␣␣␣\/␣/\␣y␣>␣x
␣␣␣␣␣␣␣␣␣␣␣/\␣y'␣=␣y␣-␣x
␣␣␣␣␣␣␣␣␣␣␣/\␣x'␣=␣x
-----------------------------------------------------------------------
Divides(p,␣n)␣==␣\E␣q␣\in␣0..n␣:␣n␣=␣q␣*␣p

DivisorsOf(n)␣==␣{p␣\in␣0..n␣:␣Divides(p,␣n)}

Max(S)␣␣==␣␣CHOOSE␣i␣\in␣S␣:␣\A␣j␣\in␣S␣:␣i␣>=␣j

GCD(m,␣n)␣==␣Max(DivisorsOf(m)␣\cap␣DivisorsOf(n))
-----------------------------------------------------------------------
GCDInv␣==␣GCD(x,␣y)␣=␣GCD(M,␣N)

Inv␣==␣TypeOK␣/\␣GCDInv
=======================================================================
```

CLOSE