```
EXTENDS␣Integers,␣GCD
␣
CONSTANT␣M,␣N
ASSUME␣/\␣M␣\in␣Nat␣\␣{0}
␣␣␣␣␣␣␣/\␣N␣\in␣Nat␣\␣{0}
␣
(***************************************************************
--algorithm␣Euclid␣{
␣␣variables␣x␣=␣M,␣y␣=␣N␣;
␣␣{␣␣while␣(x␣#␣y)␣{␣if␣(x␣<␣y)␣{␣y␣:=␣y␣-␣x␣}
␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣else␣␣␣␣␣␣␣{␣x␣:=␣x␣-␣y␣}
␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣}
␣␣}
}
␣***************************************************************
PartialCorrectness␣==
␣␣(pc␣=␣"Done")␣=>␣(x␣=␣y)␣/\␣(x␣=␣GCD(M,␣N))
␣
TypeOK␣==␣/\␣x␣\in␣Nat␣\␣{0}
␣␣␣␣␣␣␣␣␣␣␣/\␣y␣\in␣Nat␣\␣{0}
Inv␣==␣/\␣TypeOK
␣␣␣␣␣␣␣/\␣GCD(x,␣y)␣=␣GCD(M,␣N)
␣␣␣␣␣␣␣/\␣(pc␣=␣"Done")␣=>␣(x␣=␣y)
```

CLOSE