```
THEOREM␣Induction␣==␣Inv␣/\␣Next␣=>␣Inv'
<1>1.␣SUFFICES␣ASSUME␣Inv,␣Next
␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣␣PROVE␣␣Inv'
␣␣OBVIOUS
␣
<1>2.␣CASE␣/\␣x␣>␣y
␣␣␣␣␣␣␣␣␣␣␣␣/\␣x'␣=␣x␣-␣y
␣␣␣␣␣␣␣␣␣␣␣␣/\␣y'␣=␣y
␣␣<2>1.␣TypeOK'
␣␣␣␣BY␣<1>1,␣<1>2,␣SimpleArithmetic␣DEF␣Inv,␣TypeOK
␣␣<2>2.␣GCDInv'
␣␣␣␣<3>1.␣GCD(y,␣x)␣=␣GCD(y',␣x')
␣␣␣␣␣␣BY␣<1>1,␣<1>2,␣GCD3␣DEF␣Inv,␣TypeOK
␣␣␣␣<3>2.␣QED
␣␣␣␣␣␣BY␣<1>1,␣<3>1,␣<2>1,␣GCD2␣DEF␣Inv,␣TypeOK,␣GCDInv
␣␣<2>3.␣QED
␣␣␣␣BY␣<2>1,␣<2>2␣DEF␣Inv
␣
<1>3.␣CASE␣/\␣y␣>␣x
␣␣␣␣␣␣␣␣␣␣␣␣/\␣y'␣=␣y␣-␣x
␣␣␣␣␣␣␣␣␣␣␣␣/\␣x'␣=␣x
␣␣<2>1.␣TypeOK'
␣␣␣␣BY␣<1>1,␣<1>3,␣SimpleArithmetic␣DEF␣Inv,␣TypeOK
␣␣<2>2.␣GCDInv'
␣␣␣␣BY␣␣<1>1,␣<1>3,␣GCD3␣DEF␣Inv,␣TypeOK,␣GCDInv
␣␣<2>3.␣QED
␣␣␣␣BY␣<2>1,␣<2>2␣DEF␣Inv
␣
<1>4.␣QED
␣␣BY␣<1>1,␣<1>2,␣<1>3␣DEF␣Next
```