Problem Of The Month

Term: December 2005

Prove that for all natural numbers $b > a$

\[
\frac{ab}{(a,b)} + \frac{(a+1)(b+1)}{(a+1,b+1)} \geq \frac{2ab}{\sqrt{b-a}}
\]

where $(n,m)$ denotes the greatest common divisor of natural numbers $n$ and $m$. 