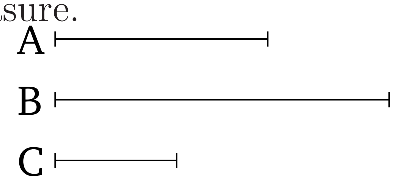
# Book 7
# Proposition 29

Every prime number is prime to every number which it does not measure.




Let $A$ be a prime number, and let it not measure $B$. I say that $B$ and $A$ are prime to one another. For if $B$ and $A$ are not prime to one another then some number will measure them. Let $C$ measure (them). Since $C$ measures $B$, and $A$ does not measure $B$, $C$ is thus not the same as $A$. And since $C$ measures $B$ and $A$, it thus also measures $A$, which is prime, (despite) not being the same as it. The very thing is impossible. Thus, some number cannot measure (both) $B$ and $A$. Thus, $A$ and $B$ are prime to one another. (Which is) the very thing it was required to show.