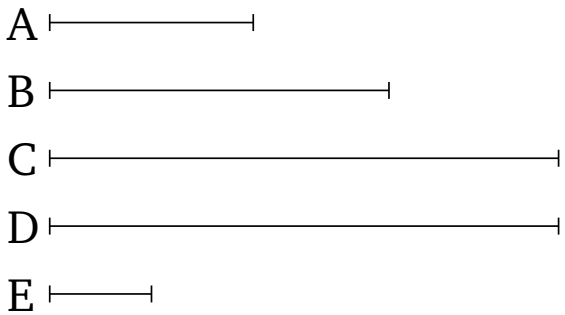
# Book 7
# Proposition 16

If two numbers multiplying one another make some (numbers) then the (numbers) generated from them will be equal to one another.




Let $A$ and $B$ be two numbers. And let $A$ make $C$ (by) multiplying $B$, and let $B$ make $D$ (by) multiplying $A$. I say that $C$ is equal to $D$.

For since $A$ has made $C$ (by) multiplying $B$, $B$ thus measures $C$ according to the units in $A$ [Def. 7.15]. And the unit $E$ also measures the number $A$ according to the units in it. Thus, the unit $E$ measures the number $A$ as many times as $B$ (measures) $C$. Thus, alternately, the unit $E$ measures the number $B$ as many times as $A$ (measures) $C$ [Prop. 7.15]. Again, since $B$ has made $D$ (by) multiplying $A$, $A$ thus measures $D$ according to the units in $B$ [Def. 7.15]. And the unit $E$ also measures $B$ according to the units in it. Thus, the unit $E$ measures the number $B$ as many times as $A$ (measures) $D$. And the unit $E$ was measuring the number $B$ as many times as $A$ (measures) $C$. Thus, $A$ measures each of $C$ and $D$ an equal number of times. Thus, $C$ is equal to $D$. (Which is) the very thing it was required to show.