

# Book 7

## Proposition 38

If a number has any part whatever then it will be measured by a number called the same as the part.

A  $\overline{\hspace{2cm}}$

B  $\overline{\hspace{1cm}}$

C  $\overline{\hspace{1.5cm}}$

D  $\overline{\hspace{0.5cm}}$

For let the number  $A$  have any part whatever,  $B$ . And let the [number]  $C$  be called the same as the part  $B$  (*i.e.*,  $B$  is the  $C$ th part of  $A$ ). I say that  $C$  measures  $A$ .

For since  $B$  is a part of  $A$  called the same as  $C$ , and the unit  $D$  is also a part of  $C$  called the same as it (*i.e.*,  $D$  is the  $C$ th part of  $C$ ), thus which(ever) part the unit  $D$  is of the number  $C$ ,  $B$  is also the same part of  $A$ . Thus, the unit  $D$  measures the number  $C$  as many times as  $B$  (measures)  $A$ . Thus, alternately, the unit  $D$  measures the number  $B$  as many times as  $C$  (measures)  $A$  [Prop. 7.15]. Thus,  $C$  measures  $A$ . (Which is) the very thing it was required to show.