

# Book 10

## Proposition 8

If two magnitudes do not have to one another the ratio which (some) number (has) to (some) number then the magnitudes will be incommensurable.

A  $\longleftarrow$

B  $\longleftarrow$

For let the two magnitudes  $A$  and  $B$  not have to one another the ratio which (some) number (has) to (some) number. I say that the magnitudes  $A$  and  $B$  are incommensurable.

For if they are commensurable,  $A$  will have to  $B$  the ratio which (some) number (has) to (some) number [Prop. 10.5]. But it does not have (such a ratio). Thus, the magnitudes  $A$  and  $B$  are incommensurable.

Thus, if two magnitudes ... to one another, and so on  
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