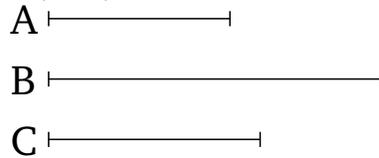


## Book 9

### Proposition 30

If an odd number measures an even number then it will also measure (one) half of it.



For let the odd number  $A$  measure the even (number)  $B$ . I say that ( $A$ ) will also measure (one) half of ( $B$ ).

For since  $A$  measures  $B$ , let it measure it according to  $C$ . I say that  $C$  is not odd. For, if possible, let it be (odd). And since  $A$  measures  $B$  according to  $C$ ,  $A$  has thus made  $B$  (by) multiplying  $C$ . Thus,  $B$  is composed out of odd numbers, (and) the multitude of them is odd.  $B$  is thus odd [Prop. 9.23]. The very thing (is) absurd. For ( $B$ ) was assumed (to be) even. Thus,  $C$  is not odd. Thus,  $C$  is even. Hence,  $A$  measures  $B$  an even number of times. So, on account of this, ( $A$ ) will also measure (one) half of ( $B$ ). (Which is) the very thing it was required to show.