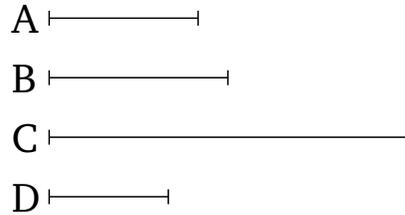


Book 9

Proposition 31

If an odd number is prime to some number then it will also be prime to its double.



For let the odd number A be prime to some number B . And let C be double B . I say that A is [also] prime to C .

For if [A and C] are not prime (to one another) then some number will measure them. Let it measure (them), and let it be D . And A is odd. Thus, D (is) also odd. And since D , which is odd, measures C , and C is even, [D] will thus also measure half of C [Prop. 9.30]. And B is half of C . Thus, D measures B . And it also measures A . Thus, D measures (both) A and B , (despite) them being prime to one another. The very thing is impossible. Thus, A is not unprime to C . Thus, A and C are prime to one another. (Which is) the very thing it was required to show.