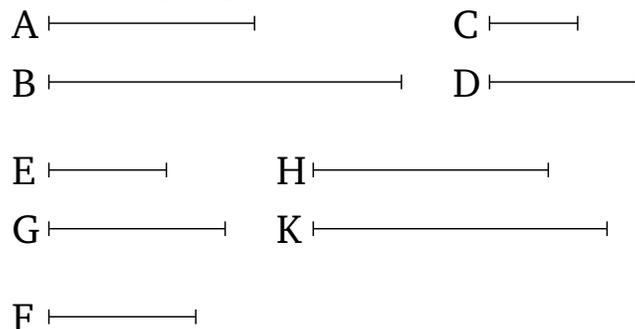


Book 8

Proposition 15

If a cube number measures a(nother) cube number then the side (of the former) will also measure the side (of the latter). And if the side (of a cube number) measures the side (of another cube number) then the (former) cube (number) will also measure the (latter) cube (number).

For let the cube number A measure the cube (number) B , and let C be the side of A , and D (the side) of B . I say that C measures D .



For let C make E (by) multiplying itself. And let D make G (by) multiplying itself. And, further, [let] C [make] F (by) multiplying D , and let C, D make H, K , respectively, (by) multiplying F . So it is clear that E, F, G and A, H, K, B are continuously proportional in the ratio of C to D [Prop. 8.12]. And since A, H, K, B are continuously proportional, and A measures B , (A) thus also measures H [Prop. 8.7]. And as A is to H , so C (is) to D . Thus, C also measures D [Def. 7.20].

And so let C measure D . I say that A will also measure B .

For similarly, with the same construction, we can show that A, H, K, B are continuously proportional in the

ratio of C to D . And since C measures D , and as C is to D , so A (is) to H , A thus also measures H [Def. 7.20]. Hence, A also measures B . (Which is) the very thing it was required to show.