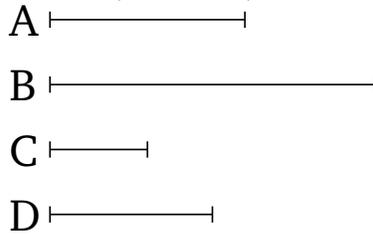


Book 9

Proposition 3

If a cube number makes some (number by) multiplying itself then the created (number) will be cube.



For let the cube number A make B (by) multiplying itself. I say that B is cube.

For let the side C of A have been taken. And let C make D by multiplying itself. So it is clear that C has made A (by) multiplying D . And since C has made D (by) multiplying itself, C thus measures D according to the units in it [Def. 7.15]. But, in fact, a unit also measures C according to the units in it [Def. 7.20]. Thus, as a unit is to C , so C (is) to D . Again, since C has made A (by) multiplying D , D thus measures A according to the units in C . And a unit also measures C according to the units in it. Thus, as a unit is to C , so D (is) to A . But, as a unit (is) to C , so C (is) to D . And thus as a unit (is) to C , so C (is) to D , and D to A . Thus, two numbers, C and D , have fallen (between) a unit and the number A in continued mean proportion. Again, since A has made B (by) multiplying itself, A thus measures B according to the units in it. And a unit also measures A according to the units in it. Thus, as a unit is to A , so A (is) to B . And two numbers have fallen (between) a unit and A in mean proportion. Thus two numbers will also fall (between) A and B in mean proportion [Prop. 8.8]. And if two (numbers) fall (between) two numbers in mean pro-

portion, and the first (number) is cube, then the second will also be cube [Prop. 8.23]. And A is cube. Thus, B is also cube. (Which is) the very thing it was required to show.