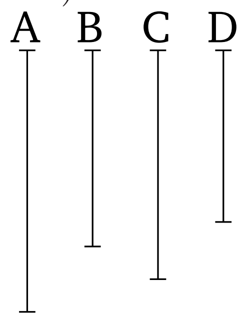
Book 10
Proposition 27

To find (two) medial (straight-lines), containing a rational (area), (which are) commensurable in square only.



Let the two rational (straight-lines) A and B, (which are) commensurable in square only, be laid down. And let C—the mean proportional (straight-line) to A and B—have been taken [Prop. 6.13]. And let it be contrived that as A (is) to B, so C (is) to D [Prop. 6.12].

And since the rational (straight-lines) A and B are commensurable in square only, the (rectangle contained) by A and B—that is to say, the (square) on C [Prop. 6.17]—is thus medial [Prop 10.21]. Thus, C is medial [Prop. 10.21]. And since as A i C (is) to D, and A and B [are] commensurable in square only, C and D are thus also commensurable in square only [Prop. 10.11]. And C is medial. Thus, D is also medial [Prop. 10.23]. Thus, C and D are medial (straight-lines which are) commensurable in square only. I say that they also contain a rational (area). For since as A is to B, so C (is) to D, thus, alternately, as A is to C, so B (is) to D [Prop. 5.16]. But, as A (is) to C, (so) C (is) to B. And thus as C (is) to B, so B (is) to D [Prop. 5.11].

Thus, the (rectangle contained) by C and D is equal to the (square) on B [Prop. 6.17]. And the (square) on B (is) rational. Thus, the
also rational.

Thus, (two) medial (straight-lines, C and D), containing a rational (area), (which are) commensurable in square only, have been found.† (Which is) the very thing it was required to show.