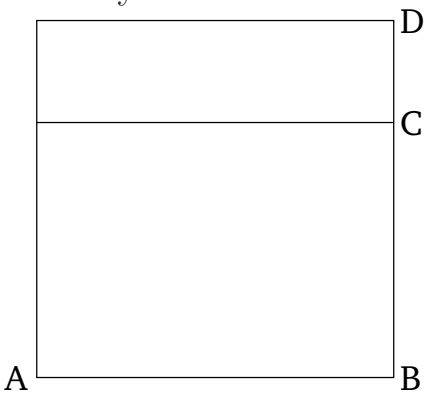
Book 10
Proposition 19

The rectangle contained by rational straight-lines (which are) commensurable in length is rational.

For let the rectangle AC have been enclosed by the rational straight-lines AB and BC (which are) commensurable in length. I say that AC is rational.



For let the square AD have been described on AB. AD is thus rational [Def. 10.4]. And since AB is commensurable in length with BC, and AB is equal to BD, BD is thus commensurable in length with BC. And as BD is to BC, so DA (is) to AC [Prop. 6.1]. Thus, DA is commensurable with AC [Prop. 10.11]. And DA (is) rational. Thus, AC is also rational [Def. 10.4]. Thus, the ... by rational straight-lines ... commensurable, and so on ....