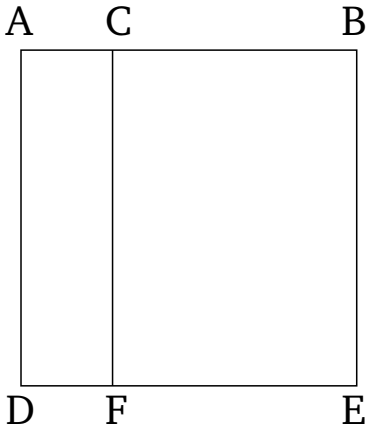
Book 2
Proposition 2

If a straight-line is cut at random then the (sum of the) rectangle(s) contained by the whole (straight-line), and each of the pieces (of the straight-line), is equal to the square on the whole.



For let the straight-line AB have been cut, at random, at point C. I say that the rectangle contained by AB and BC, plus the rectangle contained by BA and AC, is equal to the square on AB.

For let the square $ADEB$ have been described on AB [Prop. 1.46], and let CF have been drawn through C, parallel to either of AD or BE [Prop. 1.31].

So the (square) AE is equal to the (rectangles) AF and CE. And AE is the square on AB. And AF (is) the rectangle contained by the (straight-lines) BA and AC. For it is contained by DA and AC, and AD (is) equal to AB. And CE (is) the (rectangle contained) by AB and BC. For BE (is) equal to AB. Thus, the (rectangle contained) by BA and AC, plus the (rectangle contained) by AB and BC, is equal to the square on AB.

Thus, if a straight-line is cut at random then the (sum of the) rectangle(s) contained by the whole (straight-line), and each of the pieces (of the straight-line), is equal to the square on the whole. (Which is) the very thing it was required to show.