

# Book 1

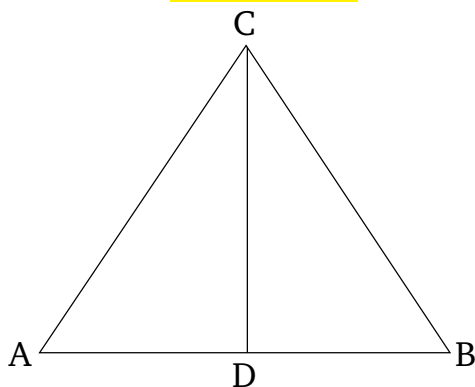
## Proposition 10

To cut a given finite straight-line in half.

Let  $AB$  be the given finite straight-line. So it is required to cut the finite straight-line  $AB$  in half.

Let the equilateral triangle  $ABC$  have been constructed upon  $(AB)$  [Prop. 1.1], and let the angle  $ACB$  have been cut in half by the straight-line  $CD$  [Prop. 1.9]. I say that the straight-line  $AB$  has been cut in half at point  $D$ .

For since  $AC$  is equal to  $CB$ , and  $CD$  (is) common, the two (straight-lines)  $AC$ ,  $CD$  are equal to the two (straight-lines)  $BC$ ,  $CD$ , respectively. And the angle  $ACD$  is equal to the angle  $BCD$ . Thus, the base  $AD$  is equal to the base  $BD$  [Prop. 1.4].



Thus, the given finite straight-line  $AB$  has been cut in half at (point)  $D$ . (Which is) the very thing it was required to do.