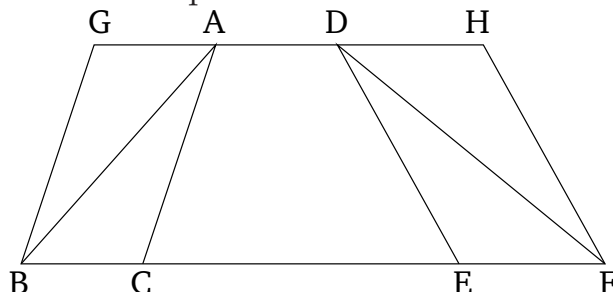# Book 1
Proposition 38

Triangles which are on equal bases and between the same parallels are equal to one another.

Let ABC and DEF be triangles on the equal bases BC and EF, and between the same parallels BF and AD. I say that triangle ABC is equal to triangle DEF.

For let AD have been produced in both directions to G and H, and let the (straight-line) BG have been drawn through B parallel to CA [Prop. 1.31], and let the (straight-line) FH have been drawn through F parallel to DE [Prop. 1.31]. Thus, $GBCA$ and $DEFH$ are each parallelograms. And $GBCA$ is equal to $DEFH$. For they are on the equal bases BC and EF, and between the same parallels BF and GH [Prop. 1.36]. And triangle ABC is half of the parallelogram $GBCA$. For the diagonal AB cuts the latter in half [Prop. 1.34]. And triangle FED (is) half of parallelogram $DEFH$. For the diagonal DF cuts the latter in half. [And the halves of equal things are equal to one another.] Thus, triangle ABC is equal to triangle DEF.

Thus, triangles which are on equal bases and between the same parallels are equal to one another. (Which is)

the very thing it was required to show.