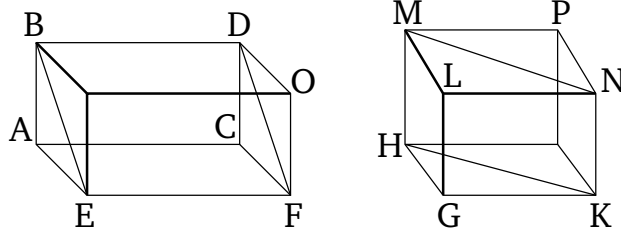


# Book 11

## Proposition 39

If there are two equal height prisms, and one has a parallelogram, and the other a triangle, (as a) base, and the parallelogram is double the triangle, then the prisms will be equal.



Let  $ABCDEF$  and  $GHKLMN$  be two equal height prisms, and let the former have the parallelogram  $AF$ , and the latter the triangle  $GHK$ , as a base. And let parallelogram  $AF$  be twice triangle  $GHK$ . I say that prism  $ABCDEF$  is equal to prism  $GHKLMN$ .

For let the solids  $AO$  and  $GP$  have been completed. Since parallelogram  $AF$  is double triangle  $GHK$ , and parallelogram  $HK$  is also double triangle  $GHK$  [Prop. 1.34], parallelogram  $AF$  is thus equal to parallelogram  $HK$ . And parallelepiped solids which are on equal bases, and (have) the same height, are equal to one another [Prop. 11.31]. Thus, solid  $AO$  is equal to solid  $GP$ . And prism  $ABCDEF$  is half of solid  $AO$ , and prism  $GHKLMN$  half of solid  $GP$  [Prop. 11.28]. Prism  $ABCDEF$  is thus equal to prism  $GHKLMN$ .

Thus, if there are two equal height prisms, and one has a parallelogram, and the other a triangle, (as a) base, and the parallelogram is double the triangle, then the prisms are equal. (Which is) the very thing it was required to show.