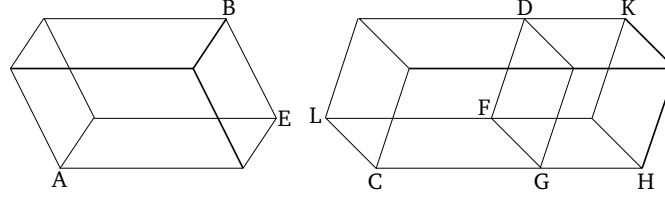


Book 11

Proposition 32

Parallelepiped solids which (have) the same height are to one another as their bases.



Let AB and CD be parallelepiped solids (having) the same height. I say that the parallelepiped solids AB and CD are to one another as their bases. That is to say, as base AE is to base CF , so solid AB (is) to solid CD .

For let FH , equal to AE , have been applied to FG (in the angle FGH equal to angle LCG) [Prop. 1.45]. And let the parallelepiped solid GK , (having) the same height as CD , have been completed on the base FH . So solid AB is equal to solid GK . For they are on the equal bases AE and FH , and (have) the same height [Prop. 11.31]. And since the parallelepiped solid CK has been cut by the plane DG , which is parallel to the opposite planes (of CK), thus as the base CF is to the base FH , so the solid CD (is) to the solid DH [Prop. 11.25]. And base FH (is) equal to base AE , and solid GK to solid AB . And thus as base AE is to base CF , so solid AB (is) to solid CD .

Thus, parallelepiped solids which (have) the same height are to one another as their bases. (Which is) the very thing it was required to show.