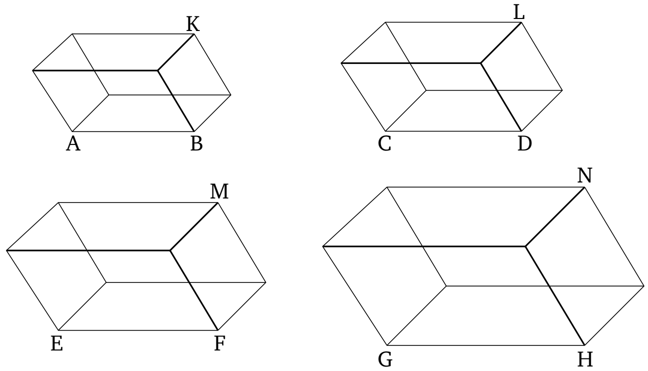
Book 11
Proposition 37

If four straight-lines are proportional then the similar, and similarly described, parallelepiped solids on them will also be proportional. And if the similar, and similarly described, parallelepiped solids on them are proportional then the straight-lines themselves will be proportional.



Let AB, CD, EF, and GH, be four proportional straight-lines, (such that) as AB (is) to CD, so EF (is) to GH. And let the similar, and similarly laid out, parallelepiped solids KA, LC, ME and NG have been described on AB, CD, EF, and GH (respectively). I say that as KA is to LC, so ME (is) to NG.

For since the parallelepiped solid KA is similar to LC, KA thus has to LC the cubed ratio that AB (has) to CD [Prop. 11.33]. So, for the same (reasons), ME also has to NG the cubed ratio that EF (has) to GH [Prop. 11.33]. And since as AB is to CD, so EF (is) to GH, thus, also, as AK (is) to LC, so ME (is) to NG.

And so let solid AK be to solid LC, as solid ME (is) to NG. I say that as straight-line AB is to CD, so EF (is) to GH.

For, again, since KA has to LC the cubed ratio that AB (has) to CD [Prop. 11.33], and ME also has to NG the cubed ratio that EF (has) to GH [Prop. 11.33], and as KA is to LC, so ME (is) to NG, thus, also, as AB (is) to CD, so EF (is) to GH.

Thus, if four straight-lines are proportional, and so on of the proposition. (Which is) the very thing it was required to show.