# Book 7
Proposition 10

If a number is parts of a number, and another (number) is the same parts of another, also, alternately, which(ever) parts, or part, the first (number) is of the third, the second will also be the same parts, or the same part, of the fourth.

For let a number AB be parts of a number C, and another (number) DE (be) the same parts of another F. I say that, also, alternately, which(ever) parts, or part, AB is of DE, C is also the same parts, or the same part, of F.
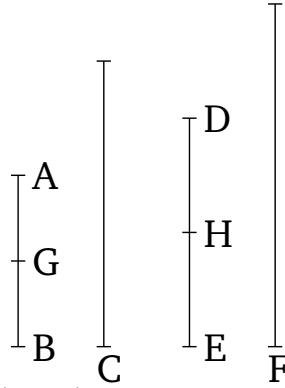
For since which(ever) parts AB is of C, DE is also the same parts of F, thus as many parts of C as are in AB, so many parts of F (are) also in DE. Let AB have been divided into the parts of C, AG and GB, and DE into the parts of F, DH and HE. So the multitude of (divisions) AG, GB will be equal to the multitude of (divisions) DH, HE. And since which(ever) part AG is of C, DH is also the same part of F, also, alternately, which(ever) part, or parts, AG is of DH, C is also the same part, or the same parts, of F [Prop. 7.9]. And so, for the same (reasons), which(ever) part, or parts, GB is of HE, C is also the same part, or the same parts, of

F [Prop. 7.9]. And so [which(ever) part, or parts, AG is of DH, GB is also the same part, or the same parts, of HE. And thus, which(ever) part, or parts, AG is of DH, AB is also the same part, or the same parts, of DE [Props. 7.5, 7.6]. But, which(ever) part, or parts, AG is of DH, C was also shown (to be) the same part, or the same parts, of F. And, thus] which(ever) parts, or part, AB is of DE, C is also the same parts, or the same part, of F. (Which is) the very thing it was required to show.