

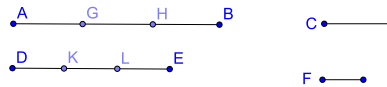
# MT 453 Elements Day 28

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March 27, 2009

## Proposition V.15

*Parts have the same ratio as the same multiples of them taken in corresponding order.*



Given magnitudes  $C$  and  $F$ .

Let  $AB$  be in the same multiple to  $C$  as  $DE$  is to  $F$ .

Let  $DE$  be an equimultiple of  $F$ .

Because  $AB$  and  $DE$  are in the same multiples, the number of magnitudes of  $C$  in  $AB$  = the number of magnitudes of  $F$  in  $DE$ .

Then  $AG = GH = HB = C$ ;  $DK = KL = LE = F$ .

And so  $AG : DK = GH : KL = HB : LE$ . (Prop. V.7)

Then  $AG + GH + HB : DK + KL + LE$ . (Prop. V.12)

Therefore,  $nC : nF = C : F$ .