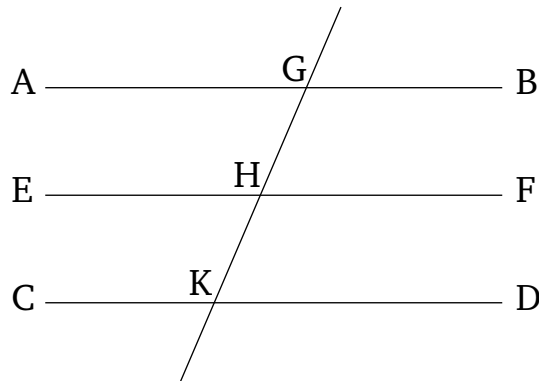


Book 1

Proposition 30

(Straight-lines) parallel to the same straight-line are also parallel to one another.



Let each of the (straight-lines) AB and CD be parallel to EF . I say that AB is also parallel to CD .

For let the straight-line GK fall across (AB , CD , and EF).

And since the straight-line GK has fallen across the parallel straight-lines AB and EF , (angle) AGK (is) thus equal to GHE [Prop. 1.29]. Again, since the straight-line GK has fallen across the parallel straight-lines EF and CD , (angle) GHE is equal to GKD [Prop. 1.29]. But AGK was also shown (to be) equal to GHE . Thus, AGK is also equal to GKD . And they are alternate (angles). Thus, AB is parallel to CD [Prop. 1.27].

[Thus, (straight-lines) parallel to the same straight-line are also parallel to one another.] (Which is) the very thing it was required to show.