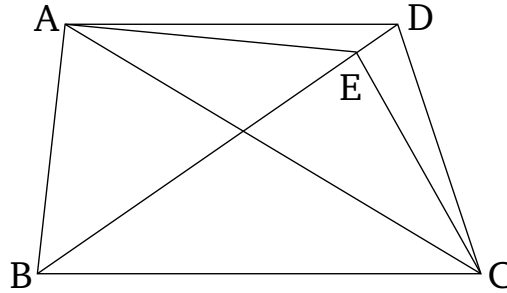# Book 1
Proposition 39

Equal triangles which are on the same base, and on the same side, are also between the same parallels.

Let ABC and DBC be equal triangles which are on the same base BC, and on the same side (of it). I say that they are also between the same parallels.

For let AD have been joined. I say that AD and BC are parallel.

For, if not, let AE have been drawn through point A parallel to the straight-line BC [Prop. 1.31] , and let EC have been joined. Thus, triangle ABC is equal to triangle EBC. For it is on the same base as it, BC, and between the same parallels [Prop. 1.37] . But ABC is equal to DBC. Thus, DBC is also equal to EBC, the greater to the lesser. The very thing is impossible. Thus, AE is not parallel to BC. Similarly, we can show that neither (is) any other (straight-line) than AD. Thus, AD is parallel to BC.

Thus, equal triangles which are on the same base, and on the same side, are also between the same parallels. (Which is) the very thing it was required to show.