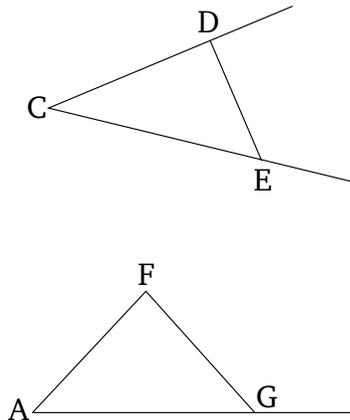


Book 1

Proposition 23

To construct a rectilinear angle equal to a given rectilinear angle at a (given) point on a given straight-line.



Let AB be the given straight-line, A the (given) point on it, and DCE the given rectilinear angle. So it is required to construct a rectilinear angle equal to the given rectilinear angle DCE at the (given) point A on the given straight-line AB .

Let the points D and E have been taken at random on each of the (straight-lines) CD and CE (respectively), and let DE have been joined. And let the triangle AFG have been constructed from three straight-lines which are equal to CD , DE , and CE , such that CD is equal to AF , CE to AG , and further DE to FG [Prop. 1.22].

Therefore, since the two (straight-lines) DC , CE are equal to the two (straight-lines) FA , AG , respectively, and the base DE is equal to the base FG , the angle DCE is thus equal to the angle FAG [Prop. 1.8].

Thus, the rectilinear angle FAG , equal to the given

rectilinear angle DCE , has been constructed at the (given) point A on the given straight-line AB . (Which is) the very thing it was required to do.