6. But the point B was proved to coincide with the point E. (*Demonstration* 3.)

7. Wherefore the base BC shall coincide with the base EF.

8. Because the point B coinciding with E, and C with F, if the base BC do not coincide with the base EF, two straight lines would enclose a space, which is impossible. (*Axiom* 10.)

9. Therefore the base BC does coincide with the base EF, and is therefore equal to it. (*Axiom* 8.)

10. Wherefore the whole triangle ABC coincides with the whole triangle DEF, and is equal to it.

11. And the other angles of the one coincide with the remaining angles of the other, and are equal to them.

Viz.: The angle ABC to the angle DEF, and the angle ACB to the angle DFE.

CONCLUSION.—Therefore, if two triangles have, &c. (*See Enunciation.*) *Which was to be shewn.*

PROPOSITION 5.—THEOREM.

The angles at the base of an isosceles triangle are equal to one another; and, if the equal sides be produced, the angles upon the other side of the base shall be equal.

HYPOTHESIS.—1. Let ABC be an isosceles triangle, of which the side AB is equal to the side AC.

2. Let the straight lines AB, AC (*the equal sides of the triangle*), be produced to D and E.

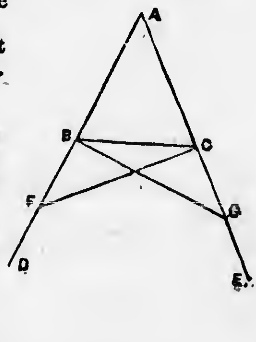
SEQUENCE.—1. The angle ABC shall be equal to the angle ACB, (*angles at the base.*)

2. And the angle CBD shall be equal to the angle BCE, (*angles upon the other side of the base.*)

CONSTRUCTION.—1. In BD take any point F.

2. From AE, the greater, cut off AG, equal to AF, the less. (*Prop.* 3, *Book* I.)

3. Join FC, GB.



DEMONSTRATION.—1. Because AF is equal to AG. (*Construction* 2.) And AB is equal to AC. (*Hypothesis* 1.)

Therefore the two sides FA, AC, are equal to the two GA, AB, each to each.