DEMONSTRATION.—1. Because the straight line AE makes, with CD, the angles CEA, AED, these angles are, together equal to two right angles. (*Prop.* 13, *Book* I.)

2. Again, because the straight line DE makes, with AB the angles AED, DEB, these angles are, together, equal to two right angles. (*Prop.* 13, *Book* I.)

3. But it has been shewn that the angles CEA, AED, are, together, equal to two right angles. (*Demonstration* 1.)

3. Wherefore the angles CEA, AED, are equal to the angles AED, DEB. (*Axiom* 1.)

4. Take away the common angle AED.

5. The remaining angle CEA, is equal to the remaining angle DEB. (*Axiom* 3.)

6. In the same manner it can be shewn that the angles CEB, AED, are equal.

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

COROLLARY.—1. *From this it is manifest, that if two straight lines cut one another, the angles which they make at the point in which they cut, are, together, equal to four right angles.*

COROLLARY.—2. *And, consequently, that all the angles made by any number of lines meeting in one point, are, together, equal to four right angles.*

PROPOSITION 16.—THEOREM.

If one side of a triangle be produced, the exterior angle is greater than either of the interior opposite angles.

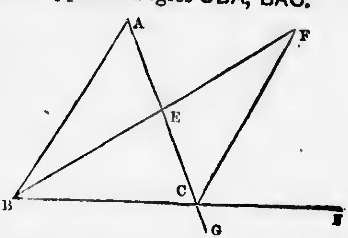
HYPOTHESIS.—Let ABC be a triangle, and let its side BC be produced to D.

SEQUENCE.—The exterior angle ACD shall be greater than either of the interior opposite angles CBA, BAC.

CONSTRUCTION.—1. Bisect AC in E. (*Prop.* 10, *Book* I.)

2. Join BE and produce it to F, and make EF equal to BE. (*Proposition* 3. *Book* I.)

3. Join FC.



DEMONSTRATION.—1. Because AE is equal to EC, and BE equal to EF. (*Construction* 1, 2.)

2. AE, EB, are equal to CE, EF, each to each.