3. And the angle AEB is equal to the angle CEF, because they are opposite vertical angles. (*Prop.* 15, *Book* I.)

4. Therefore the base AB is equal to the base CF. (*Prop.* 4, *Book* I.)

5. And the triangle AEB is equal to the triangle CEF, (*Prop.* 4, *Book* I.)

6. And the remaining angles of the one, to the remaining angles of the other, each to each, to which the equal sides are opposite.

Wherefore the angle BAE is equal to the angle ECF. (*Prop.* 4, *Book* I.)

7. But the angle ECD is greater than the angle ECF. (*Axiom* 9.)

8. Therefore the angle ACD is greater than the angle BAE.

9. If the side BC be bisected, and AC be produced to G, it can be shewn in the same manner that the angle BCG, that is, the angle ACD (*since they are opposite vertical angles*) is greater than the angle ABC.

CONCLUSION.—Therefore, if one side of a triangle, &c. (*See Enunciation.*) *Which was to be shewn.*

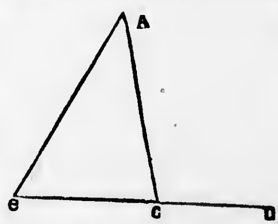
PROPOSITION 17.—THEOREM.

Any two angles of a triangle are, together, less than two right angles.

HYPOTHESIS.—Let ABC be any triangle.

SEQUENCE.—Any two of its angles together shall be less than two right angles.

CONSTRUCTION.—Produce BC to D.



DEMONSTRATION.—1. Because ACD is the exterior angle of the triangle ABC, it is greater than the interior and opposite angle ABC. (*Prop.* 16, *Book* I.)

2. To each of these add the angle ACB.

3. Therefore the angles ACD, ACB, are greater than the angles ABC, ACB. (*Axiom* 4.)

4. But the angles ACD, ACB, are, together, equal to two right angles. (*Prop.* 13, *Book* I.)

5. Therefore the angles ABC, ACB, are, together, less than two right angles.