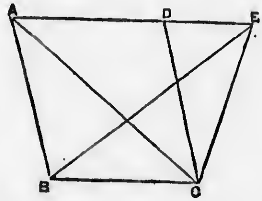
triangle EBC be upon the same base BC, and between the same parallels, BC, AE.

SEQUENCE.—The parallelogram ABCD shall be double of the triangle EBC.

CONSTRUCTION.—Join AC.

DEMONSTRATION.—1. The triangle ABC is equal to the triangle EBC, because they are upon the same base BC, and between the same parallels BC, AE. (*Prop.* 37, *Book* I.)



2. But the parallelogram ABCD is double of the triangle ABC, because the diameter AC divides it into two equal parts. (*Proposition* 34, *Book* I.)

3. Wherefore the parallelogram ABCD is also double of the triangle EBC.

CONCLUSION.—Wherefore if a parallelogram, &c. (*See Enunciation.*) *Which was to be done.*

PROPOSITION 42.—PROBLEM.

To describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

GIVEN.—Let ABC be the given triangle, and D the given rectilineal angle.

SOUGHT.—It is required to describe a parallelogram that shall be equal to the given triangle ABC, and have one of its angles equal to D.

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

2. Join AE.

3. At the point E, in the straight line CE, make the angle CEF equal to D. (*Prop.* 23, *Book* I.)

4. Through A draw AFG parallel to EC. (*Prop.* 31, *Book* I.)

5. Through C draw CG parallel to EF. (*Prop.* 31, *Book* I.)

The figure FECG is a parallelogram (*Definition* 35, *Note*), it shall be the parallelogram required.

DEMONSTRATION.—1. Because BE is equal to EC (*Construction* 1), the triangle ABE is equal to the triangle AEC. (*Prop.* 38, *Book* I.)