

clusion, shew that the Hypothesis so assumed is false, and that the first Hypothesis must be correct. This kind of demonstration is termed INDIRECT. *Proposition 6, Book I;* is the first example we meet with.

20. In the course of Book I. the following expressions will be found, which may need some explanation as to derivation, &c. :—

To APPLY one figure to another, or a parallelogram to a straight line. The sense of the word *apply* will be understood from the meaning of the Latin verb *APPLICARE* (*AD-PLICARE*), from which it is derived, conveying the idea of *laying or placing one thing closely and exactly by the side of another*, as when we fold a piece of cloth together so that the edges may coincide or touch in every part, fitting exactly to each other.

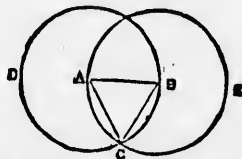
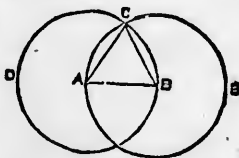
The COMPLEMENTS of a parallelogram are the parallelograms, which make up the whole parallelogram in conjunction with those about the diameter: the term complement is derived from the Latin verb *COMPLERE*, to fill up.

PROPOSITION 1.—PROBLEM.

To describe¹ an equilateral triangle upon a given finite straight line.

GIVEN.—Let AB be the given straight line.

SOUGHT.—It is required to describe an equilateral triangle upon it.



CONSTRUCTION.—1. From the centre A, at the distance AB, describe the circle BCD. (*Postulate 3.*)

2. From the centre B, at the distance BA, describe the circle ACE. (*Postulate 3.*)

3. From the point C, in which the circles cut one another, draw the straight lines CA, CB, to the points A and B. (*Postulate 1.*)

The triangle ABC shall be an equilateral triangle.

¹ Construct would perhaps be a better word than describe.