an WHEN confronted with a multiple-choice question on an ~~An examination~~ examination. The INDIRECT METHOD of proof is, in fact, sometimes called "Reduction Ad Absurdum" (reduction to absurdity). The essential feature of the method is to assume something temporarily as true; then, show that such an assumption leads to an impossible conclusion, for if a correct line of reasoning leads to an incorrect result, the assumption on which it is based must be false.

52. Congruent Triangles.

A major part of geometry is concerned with closed straight line figures. The minimum number of lines required to make a closed figure is three, and the figure so formed is called a triangle. The angle is the simplest geometric figure, and the triangle is the simplest closed figure belonging to a class of many-sided figures known as polygons.

The triangle possesses certain properties which make it useful in construction. Anyone who has braced a shelf by means of a board of wood from the edge of the shelf to the wall, made use of the important fact that the triangle is a rigid figure and cannot be change in size or shape by the pressure exerted on the sides or vertices. This is not true to other polygons and when they are used in construction, cross-pieces are inserted to convert them in triangles. This property of rigidity stems from the fact, that, given three pieces of wood, the triangle formed from them is unique and any other triangle formed from three like pieces of wood will have exactly the same size and shape of the first one. In mathematical language, this relationship of having the same size and shape is called congruence — the property which enable two or more figures to coincide, when one is superimposed on the other. The symbol $\cong$ is used to indicate congruence and implies ~~that~~ equality of size and similarity of shape.

A little experimentation will suggest that only one triangle can be constructed when we have given: three sides; two sides and the angle between them; or two angles and any side, and it is easily proved that is true. Instead of knots of the rope stretchers, we use the basis for the construction of right angles with compasses: at P, we mark off equal lengths on either side of