the rigid system outlined in Euclid's "Elements of Plane Geometry".
The word geometry itself derives from the Greek, GAIA [ge=earth]
and metrein= to measure.

p44

44. Nature of geometric proofs

A geometric proof is more rigorous than those in aspects of reasoning based on observation or on authority which is sometimes untrustworthy, but based on argument from stated specific assumptions, through a series of tested logical steps, to an inevitable conclusion. Such a conclusion is no stronger than the assumptions on which it is based.

p45

45. Standards and definitions

In order to be sure that our terms are clearly understood, we must first establish standards for our definitions. A good definition must tell not only what an object is, but also what it isn't. We should like our definitions to read correctly backwards as well forwards, so that an object which satisfies the conditions of the definition may be designated by the word defined, that is, if a triangle is a four sided figure, then every four sided figure must be a triangle. We can summarize the requirements for a good definition as follows:

(English can not be written like that (of) if in fact, it is used. *correction

1. It must place the object defined in the smallest group to which it belongs
2. It must furnish sufficient detail to distinguish that object from all similar objects in that group but should give the minimum number of details that will do so.
3. It must be reversible.
4. The terms used in the definition should already have been defined or be so simple as to require no further definition in themselves.

These criteria for a good definition are applicable in fields other than geometry and, if used, would settle many arguments. The effort to define precisely, clarifies thinking and often leads to the discovery that the participants in an argument are not discussing about the same subject.

46. Axioms

All definitions are agreements, and therefore, acceptable as

2016/10/13