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NUMBER SYSTEM FOR THE IMMEDIATE INFERENCES AND THE SYLLOGISM IN ARISTOTELIAN LOGIC[1]

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A. Determining the relation between categorical propositions: The numbers 1 and 2 are substituted for the positive terms of the propositions and -1 and -2 for the negative terms. The algebraic value of each proposition is determined as follows: (S = subject term, P = predicate).

A propositions: +S -P
E propositions: +S +P
I propositions: -S -P
O propositions: -S +P

If the term is distributed, it is preceded by a plus; if the term is undistributed, it is preceded by a minus. For example, if 1, 2 are substituted for *X*, *Y* respectively, the algebraic value of "All *X* and *Y*" is 1 - 2 = -1; the algebraic value of "Some *Y* are not non-*X*" is -2 + (-1) = -3.

The following rules determine the relationship between any two categorical propositions involving two terms or their negatives:

Categorical propositions that *agree* in quantity are:

1. *Equivalent* iff they agree in quantity and algebraic value (i.e. numerical value and sign).
2. *Independent* iff they have the same numerical value with opposite signs.
3. *Contrary* iff universal with different numerical value. *Subcontrary* iff particular with different numerical value.

Categorical propositions that *differ* in quantity are:

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