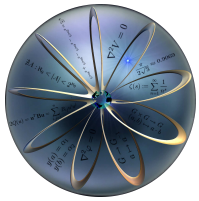

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contradictory statement

Canonical name	ContradictoryStatement
Date of creation	2013-03-22 16:27:07
Last modified on	2013-03-22 16:27:07
Owner	pahio (2872)
Last modified by	pahio (2872)
Numerical id	9
Author	pahio (2872)
Entry type	Definition
Classification	msc 03B05
Synonym	contradiction
Related topic	Tautology
Related topic	LogicalConnective
Related topic	Contradiction

A contradictory statement is a statement (or form) which is false due to its logical form rather than because of the meaning of the terms employed.

In propositional logic, a *contradictory statement*, a.k.a. *contradiction*, is a statement which is false regardless of the truth values of the substatements which form it. According to G. Peano, one may generally denote a contradiction with the symbol λ.

For a simple example, the statement $P \wedge \neg P$ is a contradiction for any statement P.

The negation $\neg Q$ of every contradiction Q is a tautology, and vice versa:

$$\neg\lambda = \curlyvee, \quad \neg\curlyvee = \lambda$$

To test a given statement or form to see if it is a contradiction, one may construct its truth table. If it turns out that every value of the last column is "F", then the statement is a contradiction.

Cf. the entry "`http://planetmath.org/Contradiction`contradiction".