

Re: Tautologies Then and Now

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On Mon, 06 Dec 2004 19:43:18 GMT, robert j. kolker <nowhere@nowhere.com> said:

> *George Cox wrote:*

>

>> *For me (am I alone?) a tautology (in the logical sense) is a formula of*

>> *propositional calculus which is true for all values of the truth values*

>> *of its constituent atomic letters.*

>

> *Theorems of first order logic are also tautologies.*

In pretty much any logic text in existence, a tautology is a sentence in the language of propositional logic that is true regardless of the assignment of truth values to its atomic components. "Tautology" used in any other way, in the context of mathematical logic, is, well, wrong. The more general notion that covers both propositional logic and first-order (and higher-order) logic is that of a logical truth, i.e., a sentence of a given language that is true in all interpretations of the language. So, alternatively, a tautology is a logical truth of propositional logic.

Chris Menzel