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Mr. Spock on Tautologies

LOGIC DICTIONARY

\vee = or $+$ = and \rightarrow = implies \sim = negation

TAUTOLOGIES

Tautologies are always true but contain no information.

$$p + p$$

Today is Monday, and today is Monday.

$$p \vee \sim p$$

*Today is Monday, or
today is not Monday.*

$$p \rightarrow p$$

*If today is Monday, then
today is Monday.*

$$p \rightarrow (p \vee q)$$

*If today is Monday, then either today
is Monday or today is some other day.*

$$\sim (p + \sim p)$$

*It's not the case that both today is
Monday and today is not Monday.*