tab.1 Propositional Rules

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Rules for $\neg$

$$\frac{\mathbb{T}\,\neg\varphi}{\mathbb{F}\,\varphi}\,\neg\mathbb{T} \qquad \frac{\mathbb{F}\,\neg\varphi}{\mathbb{T}\,\varphi}\,\neg\mathbb{F}$$

Rules for $\wedge$

$$\frac{\mathbb{T}\,\varphi\wedge\psi}{\begin{array}{c}\mathbb{T}\,\varphi\\ \mathbb{T}\,\psi\end{array}}\,\wedge\mathbb{T} \qquad \frac{\mathbb{F}\,\varphi\wedge\psi}{\mathbb{F}\,\varphi \quad | \quad \mathbb{F}\,\psi}\,\wedge\mathbb{F}$$

Rules for $\vee$

$$\frac{\mathbb{T}\,\varphi\vee\psi}{\mathbb{T}\,\varphi \quad | \quad \mathbb{T}\,\psi}\,\vee\mathbb{T} \qquad \frac{\mathbb{F}\,\varphi\vee\psi}{\begin{array}{c}\mathbb{F}\,\varphi\\ \mathbb{F}\,\psi\end{array}}\,\vee\mathbb{F}$$

Rules for $\rightarrow$

$$\frac{\mathbb{T}\,\varphi\rightarrow\psi}{\mathbb{F}\,\varphi \quad | \quad \mathbb{T}\,\psi}\,\rightarrow\mathbb{T} \qquad \frac{\mathbb{F}\,\varphi\rightarrow\psi}{\begin{array}{c}\mathbb{T}\,\varphi\\ \mathbb{F}\,\psi\end{array}}\,\rightarrow\mathbb{F}$$

The Cut Rule

$$\frac{}{\mathbb{T}\,\varphi \quad | \quad \mathbb{F}\,\varphi}\,\text{Cut}$$

The Cut rule is not applied "to" a previous signed formula; rather, it allows every branch in a tableau to be split in two, one branch containing $\mathbb{T}\,\varphi$, the other $\mathbb{F}\,\varphi$. It is not necessary—any set of signed formulas with a closed tableau has one not using Cut—but it allows us to combine tableaux in a convenient way.

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Bibliography