

-NoValue-

tab.1 Rules and Tableaux

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sec A **tableau** is a systematic survey of the possible ways a **sentença** can be true or false in a **estrutura**. The building blocks of a tableau are **fórmulas assinadas: sentenças** plus a truth value “sign,” either $\mathbb{T}$ or $\mathbb{F}$. These signed **fórmulas** are arranged in a (downward growing) tree.

Definição tab.1. A **fórmula assinada** is a pair consisting of a truth value and a **sentença**, O.s., either:

$$\mathbb{T}\varphi \text{ or } \mathbb{F}\varphi.$$

Intuitively, we might read $\mathbb{T}\varphi$ as “ φ might be true” and $\mathbb{F}\varphi$ as “ φ might be false” (in some **estrutura**).

Each **fórmula assinada** in the tree is either an *assumption* (which are listed at the very top of the tree), or it is obtained from a **fórmula assinada** above it by one of a number of rules of inference. There are two rules for each possible **operador principal** of the preceding **fórmula**, one for the case where the sign is $\mathbb{T}$, and one for the case where the sign is $\mathbb{F}$. Some rules allow the tree to branch, and some only add **fórmulas assinadas** to the branch. A rule may be (and often must be) applied not to the immediately preceding **fórmula assinada**, but to any **fórmula assinada** in the branch from the root to the place the rule is applied.

A branch is *closed* when it contains both $\mathbb{T}\varphi$ and $\mathbb{F}\varphi$. A closed **tableau** is one where every branch is closed. Under the intuitive interpretation, any branch describes a joint possibility, but $\mathbb{T}\varphi$ and $\mathbb{F}\varphi$ are not jointly possible. In other words, if a branch is closed, the possibility it describes has been ruled out. In particular, that means that a closed **tableau** rules out all possibilities of simultaneously making every assumption of the form $\mathbb{T}\varphi$ true and every assumption of the form $\mathbb{F}\varphi$ false.

A closed **tableau for** φ is a closed **tableau** with root $\mathbb{F}\varphi$. If such a closed **tableau** exists, all possibilities for φ being false have been ruled out; O.s., φ must be true in every **estrutura**.

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Referências Bibliográficas