

prf.1 Modal Systems

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sec

Proposition prf.1. *Let $\varphi_1, \dots, \varphi_n$ be schemas. Then there is a smallest modal logic Σ containing all instances of $\varphi_1, \dots, \varphi_n$. Such a modal logic is called a modal system and denoted by $\mathbf{K}\varphi_1 \dots \varphi_n$. The smallest normal modal logic is denoted by \mathbf{K} .*

Proof. Given $\varphi_1, \dots, \varphi_n$, define Σ as the intersection of all normal modal logics containing all instances of $\varphi_1, \dots, \varphi_n$. The intersection is non-empty as $\text{Frm}(\mathcal{L})$, the set of all formulas, is such a modal logic. \square

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Bibliography