231. *Proofs of Some Axioms by Stroke Function*

By Yasuo SETÔ

(Comm. by Kinjirô KUNUGI, M. J. A., Dec. 12, 1968)

In this paper, we shall give proofs of some axioms written by the stroke function. For details of the stroke function and deduction rules, see R. Price [1].

The Rules of the System.

Stroke Introduction ($|I$)

1	p	hypothesis
⋮	⋮	
2	$q \mid q$	assumption
3	$p \mid q$	1−2, $\mid 1$

Stroke Elimination ($|E$)

1	p	hypothesis
2	$\overline{q} \mid p$	hypothesis
3	$\overline{q} \mid q$	1.2, $\mid E$

Double stroke Elimination ($\|E$)

1	p	hypothesis
2	$\overline{(q \mid q)} \mid p$	hypothesis
3	q	1.2, $\|E$

These three rules yield many other deduction schemata (see [1]). The followings are used in this paper.

Deduction schemata

Negation Introduction ($\sim I$)

1	$\overline{p}$	hypothesis
⋮	⋮	
2	q	assumption
3	$q \mid q$	assumption
4	$p \mid p$	1−3, $\sim I$

Tautology (Taut)

1	$p \mid (p \mid p)$
⋮	⋮

Rules of Detachment (Nicord)

1	p	hypothesis
2	$\overline{p \mid (q \mid r)}$	hypothesis
3	r	1.2, Nicord

Second Rules of Detachment (Docin)

1	p	hypothesis
2	$\overline{p \mid (q \mid r)}$	hypothesis
3	q	1.2, Docin