A SIMPLE DECISION PROCEDURE FOR ONE-VARIABLE IMPLICATION/NEGATION FORMULAE IN INTUITIONIST LOGIC

STORRS McCALL

Those who have agonized over the intuitionist theory of deduction, as I have, will perhaps welcome a simple decision procedure for implication/negation formulae containing only one variable ('C-N-p formulae'). The procedure consists essentially in showing every such formula to be equivalent to one of six non-mutually-equivalent forms. Since the intuitionist calculus admits of the replacement of equivalents, any C-N-p formula, or C-N-p portion of a more complex formula, may be replaced by one of these six forms.[1]

The six forms are the following:

1. Cpp
2. NNp
3. $CNNpp$
4. p
5. Np
6. $NCpp$,

and the more complex formulae in which they occur as arguments of the functions C and N are each equivalent to one of the original six, as indicated in the following table:

TABLE I

	C	1	2	3	4	5	6	N
Cpp	* 1	1	2	3	4	5	6	6
NNp	2	1	1	3	3	5	5	5
$CNNpp$	3	1	2	1	2	5	6	6
p	4	1	1	1	1	5	5	5
Np	5	1	2	1	2	1	2	2
$NCpp$	6	1	1	1	1	1	1	1