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List of Symbols and Notationsa) Variables used in object languages and in the metalanguage

$a, \dots, e$	Individual (free)	3
$t, x, y, z$	" (bound)	3
$A, \dots, E, G, H$	Predicate (free)	3
$P, Q, R, S$	" (bound)	3
$\underline{a}^n, \underline{a}, \dots$	Tuples	3
$\mathbb{N}, \dots, \mathbb{N}$	Natural numbers	3, 4
$\underline{\mathbb{N}}^n, \underline{\mathbb{N}}, \dots$	Tuples	3, 104
$\underline{\mathbb{N}}^n, \underline{\mathbb{N}}, \dots$	Constant tuples	104
$I, \dots, N$	Sets of natural numbers	4
$\alpha$	Terms	4
$\alpha, \mathcal{L}, \dots$	Formulae	4
$\underline{\alpha}^n, \underline{\alpha}, \dots$	Tuples	9
$X, Y, Z, X'', \dots$	States	26
$u, v, w$	Words	29
$U, V, W$	Sets of words	29
$\varphi, \chi, \psi$	Threads	26
$\Phi, \chi, \Psi$	Sets of Threads	26
$\mathcal{F}$	Finite automata	87
$S, T$	Theories	115

All variables may be indexed.

b) Constants, special symbols

$=, o, ', <, +n, \equiv (n)$	Number theoretic symbols	3, 6, 7, 122
$\wedge, \vee, \neg, \rightarrow, \leftrightarrow, =, \forall, \exists, T, F$	Logical symbols	3, 5
$[, ], \lceil, \rceil, \dots$	Brackets and dots for bracketing of	3
$\cdot, :, \vdots, \dots$	formulae, for quantifiers and argu-	3
$(, ), [, ]$	ments of predicate variables and	3, 4
	formulae	
$(\exists t)_a^b, (\forall t)_a^b, (\exists t)_a, (\forall t)_a,$		
$(\exists^\omega t), (\forall^\omega t), (\exists P)^\omega$	Specialized quantifiers	6
$(\exists t)^a, (\forall t)^a, (\exists_\omega t), (\forall_\omega t),$		
$(\exists P)_\omega$	"	122
$\frac{b}{a}, \frac{b}{a}, \frac{b}{a}$	Relations on predicates	76
$<$	Ordering on the set of states	76
$<_M$	" on a set M	78

c) Formulae, rules and schemata

(COMP)	Principle of comprehension	5
(EXT)	" of extensionality	5
(R)	Course-of-value recursion	11
(REXT)	Restricted principle of extensionality	11
(RR)	Primitive recursion	88
(SP)	Substitution rule for predicate variables	4
$\equiv$	Semiotic equality of formulae	4

d) Classes of formulae

$\Sigma^0, \tilde{\Sigma}^0$	28;	$\Sigma_w, \tilde{\Sigma}_w, \Pi_w, \tilde{\Pi}_w$	100
$\Sigma_0$	123;	$\Sigma_w^\omega, \tilde{\Sigma}_w^\omega, \Pi_w^\omega, \tilde{\Pi}_w^\omega$	23
$\Sigma_R^0, \tilde{\Sigma}_R^0$	31;	$\Sigma_w^{\omega^*+\omega}, \Pi_w^{\omega^*+\omega}$	123
$\Sigma_0^R$	124;	$\Sigma_{1,w}^\omega$	103

e) Interpretation

$\mathbb{N}$	Set of natural numbers	7
$\mathbb{Z}$	" of integers	122
$\cup, \cap, \{\}, \subseteq$	Set-theoretical symbols	v
$\pi(M)$	Set of all subsets of M	v
$\pi_w(M)$	" " " $w$ -element subsets of M	14
$\pi_{fin}(M)$	" " " finite " "	117
$\pi_{uper}(\mathbb{N})$	" " " u.p. " " $\mathbb{N}$	115
$O_w$	" " $w$ -states	26
$T_w$	" " $w$ -words	29
$S_w$	" " $w$ -threads	26
$T(f)$	" " words accepted by a $\Sigma^0$ -formula $f(\underline{A})$	29
$T(\gamma)$	" " " " by an automaton $\gamma$	88
$S(f)$	" " threads satisfying $f(\underline{A})$	27
$N(f)$	" " $w$ -numbers satisfying $f(\underline{a})$	103
$DT_w$	" " definable sets of words	89
$ADT_w$	" " automaton-definable sets of words	89
$DS_w$	" " definable sets of threads	94
$\underline{T}^w, \underline{F}^w$	Constant $w$ -states	26
$\wedge$	Empty word	29
$L(f)$	Number of predicate quantifiers in $f$	57

f) Theories and systems

CO	Elementary theory of congruence and order	96
P	" " of addition	97
COP	Monadic first order theory of congruence and order	97
SC	Monadic second order theory of successor	6
SC $\mathbb{Z}$	Monadic second order theory of successor over the integers	122
SC <sub>fin</sub> , W2A	Variants of SC	117
SC <sub>qfin</sub> , L <sub>1</sub> <sup>3</sup>	Variants of SC	120
SC <sub>per</sub>	Variants of SC	116
SC <sub>fin</sub> <sup><math>\mathbb{Z}</math></sup> , SC <sub>qfin</sub> <sup><math>\mathbb{Z}</math></sup> , L <sub>1</sub> <sup>2</sup> , L <sub>1</sub> <sup>4</sup>	Variants of SC $\mathbb{Z}$	124

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