Corrections and Improvements

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Chapter 1

page 12, line -18 f.	The elements of a theory are the axioms of the theory, which are called **non-logical axioms**. In general, a non-logical axiom is just a formula which is not a logical axiom. ~~Notice that non-logical axioms are sentences (i.e., formulae without free variables).~~
page 13, line 3	...with $\mathrm{free}(\varphi) = \{x\}$
page 13, line -12	and for variables ν ~~which do not occur free in any non-logical axiom~~:
page 13, line -7 f.	~~It is worth mentioning that the restriction on ($\forall$) is not essential, but will simplify certain proofs (e.g., the proof of the Deduction Theorem 2.1).~~
page 16, line 15	~~In Appendix 17~~ At the end of the book ...

Chapter 2

page 19, line -7 f.	...and $\mathbf{\Phi} + \psi \vdash \varphi$, where in the formal proof of φ from $\mathbf{\Phi} + \psi$, Generalisation was not applied to variables which occur free in ψ, then...
page 20, line 17	...does not occur free in ψ.
page 22, line 1	$\mathbf{\Phi}+\cancel{\{}\varphi\cancel{\}}$
page 25, line -7	(Proof by Contraposition)
page 28, line 5	instance of L_{12}
page 28, line -2	$\forall\nu\varphi \circ \psi$
page 30, line 1	... for some sentence φ ...
page 33, line 1	*We first show* ψ ... *This proves* φ.

Chapter 3

page 39, line 7	$\mathbf{M}_2 \vDash \neg\varphi_1 \wedge \cancel{\neg}\varphi_2$

Chapter 4

page 51, line 1 f.	... such that $\sigma_m \in \overline{\mathsf{T}}$. ~~if no such m exists, we set $m = 0$~~
page 51, line 3	... contradicting $\sigma_m \in \overline{\mathsf{T}}$; notice that $\mathrm{Con}(\mathsf{T} + \mathsf{T}_0)$. ~~(respectively $\mathsf{T} \nvdash \sigma_0$ in the case of $m = 0$)~~
page 51, line 9	... $\mathsf{T}_0 = [\neg\sigma_0]$ is ...

Chapter 5

page 54, line 1	$\#\tau_0, \ldots$
page 60, line 8	$\sigma \in \tilde{\mathsf{T}} \iff \mathbf{M} \vDash \neg\sigma$

Chapter 8

page 84, line 16	. . . no common divisor greater than 1.

Chapter 9

page 96, line 1	. . . strictly increasing function with $G(0) > 1$ which is . . .
page 101, line -15	$\ldots\ \mathbf{2}^{\#\wedge} \cdot \mathbf{3}^{\#\psi_0} \cdot \mathbf{5}^{\#\psi_1}$
page 104, line -16	$(\mathrm{var}(c_k)\ \wedge\ c_k \neq v \to c'_{k+\mathrm{lh}(c'')} = c_k)$

Chapter 10

page 118, line -10	$\mathrm{prv}^{\mathrm{R}}_{\mathsf{T}}(x)$
page 118, line -9	$\mathrm{prv}^{\mathrm{R}}_{\mathsf{T}}(\ulcorner\sigma\urcorner)$

Chapter 13

page 155, line 9	$\ldots \forall z(z \in x \to z \in y)$
page 155, line -15	$\ldots \{x\}$, where $\{x\}$ denotes the set which contains the single element x.
page 159, line -2	. . .with domain α, for some ordinal number α, then. . .
page 162, line 1	$\forall x\big(x \neq \emptyset \to \exists y(y \in x \wedge (y \cap x = \emptyset))\big)$

Chapter 14

page 179, line -10	$\ulcorner\forall v_j\varphi\urcorner := \langle 7, j, \ulcorner\varphi\urcorner\rangle$
page 186, line 6	. . . from every non-empty set.

Chapter 17

page 203, line -7	$\forall x\forall y(x + y = y + x)$
page 204, line 6	$\forall x\forall y\forall z(x < y \wedge \mathsf{0} < z \to \ldots)$
page 204, line -3	. . . of the form $\langle 0, y\rangle$.
page 205, line 13	$\langle x_0, y_0\rangle < \langle x_1, y_1\rangle \ :\iff\ y_0 + x_1 < y_1 + x_0$
page 205, line 14	$z = \langle x, y\rangle$ if $\langle x, y\rangle > \langle 0, 0\rangle$
page 208, line -7	$\ldots + \lvert a^m_k - a^n_k\rvert + \ldots$
page 209, line 3	$N := \max\{N_0, N_1, \lceil\frac{3}{\delta}\rceil\}$, where $\lceil\frac{3}{\delta}\rceil$ is the least integer bigger than or equal to $\frac{3}{\delta}$
page 209, line 10	Since $b_k > \delta$, . . .
page 214, line -4	$-\lfloor -n \cdot a_{k_{-n}}\rfloor$ otherwise.

Minor Corrections and Improvements

page 9, line -12	... most basic formulae we have, ...
page 11, line -22	... arbitrary ~~first-order~~ formulae
page 14, line -12	~~instance of~~ PA_3
page 14, line -7	~~instance of~~ PA_2
page 14, line -1	$\varphi_9 \to (\varphi_{10} \to \dots$
page 15, line 1	$\varphi_{10} \to (\varphi_{10} \wedge \varphi_9)$ from φ_{11} and φ_9 by...
page 15, line 2	Commutativity and associativity of $\wedge$ and $\vee$ (up to logical equivalence)...
page 16, line 9	from φ_{12} and φ_{10} by...
page 17, line -11	Prove (K), (L.0), and (R) from the tautologies list at book's end first.
page 22, line 9	from φ_{12} and φ_{10} by...
page 36, line 6	In other words, ...
page 40, line 5 ff.	replace φ_0 by φ.
page 43, line -13	...whether␣the...
page 50, line -22	... as an initial segment.
page 96, line 1	... be a~~n~~ unary ...
page 137, line -8	$\mathscr{L}_{\mathsf{PrA}} = \{\mathtt{0}, \mathtt{s}, +,\}$