Errata

page 2, Sect. 1.1 [added Oct. 14]:

in the definitions of $R \cup Q$ and $R \cap Q$, replace “$\in M$” by “$\in M$”

page 4, Sect. 1.3 [added Oct. 21]:

replace the definition of total by “if $R(x, y)$ or $R(y, x)$ or $x = y$ for all $x, y \in M$.”

page 5, Sect. 1.3 [added Nov. 25]:

in the definition of a strict partial ordering, replace “on a set $M$” by “on a non-empty set $M$”

page 12, Ex. 2.1 and 2.2 [added Oct. 21]:

replace every $A$ and $B$ by $P$ and $Q$.

page 12, Ex. 2.2 [added Oct. 21]:

replace the second sentence by “Then $\text{pol}(F, 1) = \text{pol}(F, 12) = \text{pol}(F, 221) = -1$ and $\text{pol}(F, \varepsilon) = \text{pol}(F, 2) = \text{pol}(F, 21) = \text{pol}(F, 22) = \text{pol}(F, 11) = 1$.”

page 16, Prop. 2.7, Proof [added Oct. 21]:

replace $G_2$ by $H_2$.

page 19, Prop. 2.9, Proof [added Oct. 21]:

replace “$\mu_1(H[F]) > \mu_1(H[G])$” by “$\mu_1(H[F]_p) > \mu_1(H[G]_p)$”

page 20, “Satisfiability-preserving Transformations” [added Oct. 21]:

replace “$H[F] \land (P \leftrightarrow F)$” by “$H[F]_p \land (P \leftrightarrow F)$”

page 24, Sect. 2.5 [added Nov. 25]:

in the pseudocode for the Davis-Putman-Logemann-Loveland procedure, replace “unit clause $P$” and “unit clause $\neg P$” by “unit literal $P$” and “unit literal $\neg P$”

page 26, “Restart” [added Nov. 25]:

replace “adopted” by “adapted”

page 42, “Theory of an Algebra” [added Nov. 25]:

replace “sets of algebras” by “classes of algebras”

page 46, “The Complete Picture” [added Nov. 25]:

replace $\Rightarrow^*_{OCNF}$ by $\Rightarrow^*_\text{CNF}$
add an additional rule

\[ H[QxG]_p \Rightarrow_{\text{MS}} H[G]_p \]

(this rule is only needed if we start with a formula in which \( x \) does not occur at all freely in \( G \); otherwise the remaining rules are sufficient)

replace “completeness proof for resolution” by “completeness proof for general resolution”

replace “a a set” by “a set”

replace “a proof \( \Gamma \)” by “a proof in \( \Gamma \)”

replace “If” by “The”

insert space between the formulas \( P(a,a) \lor \neg Q(f(a,b)) \) and \( \neg P(a,a) \).

add after “quasi-ordering”: “(i.e., a reflexive and transitive, but not necessarily anti-symmetric relation)”

replace \( E = x_1 = u_1, \ldots, x_k = u_k \) by \( E = \{ x_1 = u_1, \ldots, x_k = u_k \} \).

replace “Noetherian” by “terminating”

replace \( t_i/p_i = x_{i+1}, \ldots, p_n = x_1 \) by \( t_i|_{p_i} = x_{i+1}, t_n|_{p_n} = x_1 \).

replace “different form” by “different from”
page 68, Thm. 3.36 [added Jan. 31]:

replace “first-order formulas” by “closed first-order formulas”

page 69, “Resolution Calculus Res_{sel}” [added Jan. 31]:

replace “atom ordering ≻” by “ordering ≻ on ground atoms”

page 71, “Avoiding Rotation Redundancy” [added Jan. 31]:

replace twice “orderings restrictions” by “ordering restrictions”

page 73, Thm. 3.40, Proof [added Jan. 31]:

replace “let” by “Let”

page 78, Sect. 3.14 [added Feb. 6]:

replace in (i) “strictly maximal in D_{i}\sigma” by “strictly maximal in D_{i}\sigma \lor B_{i}\sigma;”
replace in (iii) “maximal in C\sigma” by “maximal in C\sigma \lor \neg A_{i}\sigma”

page 81, “Classification of Formulas” [added Jan. 31]:

replace every X and Y by F and G.

page 81, “Tableaux: Notions” [added Jan. 31]:

In the definition of “maximal” replace “each non-atomic formula F on P” by “each formula F on P that is neither a literal nor \bot nor \top”

page 83, Thm. 3.48 [added Jan. 31]:

insert “the” after “Then”

page 83, “Consequences” [added Jan. 31]:

insert “the” after “dramatic impact on”

page 86, “Free-Variable Tableaux” [added Jan. 31]:

delete “is” after “This feature is what”

page 90/91, Sect. 4.1 [added Jan. 31]:

replace every p by P.

page 91, Prop. 4.1, Proof [added Jan. 31]:

replace the sentence “Now for every \Sigma-term t . . . \mathcal{B}(\beta)(\tilde{G}) = \mathcal{A}(\gamma)(G)” by

For any \mathcal{A}-assignment \gamma choose some \mathcal{B}-assignment \beta such that \mathcal{B}(\beta)(x) \in \mathcal{A}(\gamma)(x)
for every x, then for every \Sigma-term t we have [\mathcal{B}(\beta)(t)] = \mathcal{A}(\gamma)(t), and analogously
for every \Sigma-formula G, \mathcal{B}(\beta)(\tilde{G}) = \mathcal{A}(\gamma)(G).
in the definition of a rewrite relation, replace $s/p$ by $s|_p$.

replace $s, t \in T_\Sigma(X)$ by $s, t \in T_\Sigma(Y)$

insert at the beginning of the proof:

Without loss of generality, we assume that all variables in $\vec{x}$ are contained in $X$. (Otherwise, we rename the variables in the equation. Since $X$ is countably infinite, this is always possible.)

replace $s \succ s'$ by $s \succ_A s'$

in the last item replace “to each function symbol $f$ with $\text{arity}(n) \geq 1$” by “to each function symbol $f/n \in \Omega$ with $n \geq 1$”

in the definition of a cycle replace “non-empty path” by “non-empty path in $K$”

replace $t_1 \in T_\infty$ by $t_1 \in T^\infty_\infty$. 