

Corrections for Logic for Applications 2nd edition
November 27, 2006

p. 10 -12: We begin by ...of the tree. \rightarrow We begin by defining a linear ordering \leq_n of each level n by induction on the levels. Suppose σ and τ are on level $n + 1$ and are the immediate successors of σ' and τ' , respectively, of level n . If $\sigma' <_n \tau'$ then $\sigma <_{n+1} \tau$. If $\sigma' = \tau'$ then we order their immediate successors in some fixed fashion to determine the relationship between σ and τ .

l. -4: find the largest... T . \rightarrow

find the smallest level of T at which the predecessors x' and y' of x and y , respectively, are distinct.

p. 11 Exercise 6: chain \rightarrow sequence

p. 11 Exercise 7: We define the lexicographic ordering $<_L$ on n -tuples $\langle x_1, \dots, x_n \rangle$ of natural numbers as would be expected: $\langle x_1, \dots, x_n \rangle <_L \langle y_1, \dots, y_n \rangle$ if $x_i < y_i$ for the least i such that $x_i \neq y_i$.

p. 25 l. 3 of Definition 3.8 $\mathcal{V} \rightarrow \mathcal{V}(\sigma)$

l. -2 $\pm \rightarrow \Sigma$

p.34 1.7 of proof of 4.8 to end of proof: in the construction.... we would reduce E . \rightarrow

in the construction of the CST, if E is not already reduced on P , we reduce an unreduced entry on a level $k \leq n$. Thus we can proceed for at most finitely many steps in this construction before we would reduce E .

p. 35 l. 5: add at the end: This notion corresponds to the number of occurrences of connectives in the proposition.

p. 36 4b: mismatched parentheses. should be $((\alpha \wedge \beta) \rightarrow \gamma) \rightarrow ((\alpha \rightarrow (\beta \rightarrow \gamma)))$.

p. 44 l. -4 At end of this paragraph add: Note that if $\sigma \subseteq \tau \in T$ then $\sigma \in T$ and so T is binary branching.

p. 51 l. 3: the propositional \rightarrow the negations of propositional

p. 52 Definition 8.6: a labeled binary tree \rightarrow a finite labeled binary tree

p. 64 l. 2: $\mathcal{R}^A \rightarrow \mathcal{R}^A(S)$

p. 68 l. 10: proof is an ordinary \rightarrow proof can easily be made into an ordinary

(i) of Definition 10.4: is a clause \rightarrow is a nonempty clause

p. 76 l. -4 above Example 10.18: it is clear that \rightarrow it is clear (for finite programs P) that

- p. 78 problem 4: If Patterson comes....Jones is ill. \rightarrow If Patterson comes, he will force Robinson back to his senses and Patterson will come if Jones is ill.
- p. 119 figure 34: the remark (suppose $t_0 = c_0$) should be one line higher up and below the entry $T(\neg R(c_0, c_0))$ there should be a vertical line leading to an extra entry $FR(c_0, c_0)$ before the \otimes symbol.
- p. 125 problem 2: infinite model but no finite ones \rightarrow a model with an infinite domain but none with a finite domain.
- p. 127 l. -1: From $\forall x\alpha$ infer α . \rightarrow From α infer $\forall x\alpha$.
- p. 137 problem 3 (indeed least) \rightarrow (indeed least in the sense of set containment)
- p. 140 l. 5: $v(\psi(\theta\sigma)) \rightarrow v(\psi(\theta\sigma))$.
- p. 142 l. 7: $\{x/h(z)\}$ is our $\rightarrow \{x/h(z), y/z\}$ is our
 l. 3 of next paragraph: If it does not contain \rightarrow If it contains
- p. 144 problem 2: $hf(w) \rightarrow h(f(w))$ and $hf(a) \rightarrow h(f(a))$ (in both parts)
- p. 147 Example 13.4: Next to last line of tableaux switch the underline from $\neg P(u, v)$ to $P(v, u)$ in the left hand clause and change $P(z, x) \rightarrow P(x, z)$ in the right hand one.
- p. 151l. 6: T_1 and T_2 . $\rightarrow T_1$ and T_2 with one more resolution giving C from C_1 and C_2 .
- p. 152-3 problem 6: At beginning change six sentences \rightarrow seven sentences and at the end of the list add (vii) there is a bank.
- p. 155 Definition 14.3 l. 1: We say that \rightarrow In this situation, we say that
- p. 160 l. 1: linear resolution \rightarrow linear input resolution
- p. 162 l.2 of proof of Theorem 1.8: I.10.9 \rightarrow I.10.11
- p. 163 l. 2 of Theorem 1.10: $G = \{A_1, \dots, A_n\} \rightarrow G = \{\neg A_1, \dots, \neg A_n\}$
- p. 174 problem 11 after the program: The goal ? $- tc(a, b)$ will succeed exactly \rightarrow The fact $tc(a, b)$ is a logical consequence of this program and the edge database exactly
- p. 181 problem 4: II.7-8 and III.11-12 \rightarrow II.5.7-8 and III.2.12-14
- p. 189 l. 7: After (Exercise 4). Add: Note that this does not imply that $=$ is true identity.
- p. 230 Definition 3.2(ii) l. -1: of the form $Tq \Vdash \psi \rightarrow$ of the form $Tp \Vdash \psi$, $Fp \Vdash \psi$, $Tq \Vdash \psi$
- p. 259 l. -7: an open formula \rightarrow a formula with free variables
 l. -5: open $\alpha \rightarrow \alpha$ with free variables
- p. 323 definition of $a(S \times R)$: $aRc \rightarrow aSc$

- p. 351 l. -3: If A and $A \rightarrow B$ then B
- p. 364 problem 8: $\alpha(\beta * \gamma) \rightarrow \alpha * (\beta * \gamma)$ –
- p. 378 Exercise 1. 1: Reconstruct the syllogisms \rightarrow To the extent you can (there is some ambiguity) reconstruct the syllogisms