Errata for Maths Reasoning Book: 2nd edition

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"Second Edition" refers to the fourth printing with corrections (of the 1st edition)

Chapter 2: Arguments about propositions

Section 2.1.1: Negation

p.19, diagram:

$\sim p$ should be $\neg p$.

Section 2.1.2: Conjunction

p.20, diagram, and in subsequent diagrams:

$p\&q$ should be $p \wedge q$.

Chapter 3: The Internal Structure of Propositions

Section 3.3: The Meaning of Formulae

p.40, line 6:

For "expresssion" read "expressions".

Chapter 4: Miscellaneous Topics

Section 4.1.2: Functionals

p.53, lines 8–9:

Exercise 10 should read:
Give a general definition of what it means for the limit of a unary function $f(X)$ to be ∞ as $x \to l$.

p.53, line -3:

Omit #

Section 4.1.4: Omega order logic

p.54, line -11:

This should read:

> ..., since X has type *real* and ...

Section 4.3.1: Function or Predicate?

p.61, line -5:

for “set all y” read “set Y of all y”.

Section 4.3.5: The Importance of a Semantics

p.66, lines5–6:

for “*furthera* which are not in *furtherb*”
read “*furtherb* which are not in *furthera*”.

Section 5.1.1: Stage 1

p. 74, line -14:

Omit second *the*.

p.74, line -3:

Second C' should be C''.

5.1.2: Stage 2

0.0.1 ¡

*p. 75, line 3 of section: Second P' should be P''.

p 76, line 4 of section:

Correct spelling to *standardizing*.

Section 5.1.3: Stage 3

p. 76, line 4 of section:

” should be $''$.

p.76, line 9 of section:

Second P' should be P''.

Chapter 6

Section 6.2: Representing Choice

p. 89, lines -2 to -1:

Exercise 18 should read: Represent the applications of clause 2 to clause 5 by labelling the two unlabelled arcs.

Chapter 7

Section 7.2: A Resolution Proof and the Combinatorial Explosion

p. 112, line 11:

Correct spelling to *sheer*.

Section 7.3.2: Cheating Techniques

p. 115, line 12:

Correct spelling to *inadequacies*.

Section 7.5: Alternative Axiomization

p. 119, line -3:

Omit second comma.

Section 10.1: Formalising Geometry

p.172, line 3:

rightarrow should be $\rightarrow$.

Section 10.3: Constructions

p. 175, line -7:

eg should be *seg*. Also, there is an extraneous n in the diagram (top left of diagram).

p 177, line -8:

This should read:

> ... and find its intersection with *ea*... (not *ec*).

Section 10.4

lines 10-13:

The assignments for a,b,c,d do not work. Replace by

$a \rightarrow < \sqrt{3}, \sqrt{7/6} >$
$b \rightarrow < 0, 0 >$
$c \rightarrow < \sqrt{3}, 0 >$
$d \rightarrow < \sqrt{3}, 1 >$

10.5: Can the diagram be generalised?

p.183, line 1 (after diagram):

This should read:
4. $Z \mid X \wedge Z \nmid Y \rightarrow X \nmid Y$,

Section 10.7: The Theoretical Underpinning for Semantic Checking

p. 187, line 15:

Theorem 10.2 should commence:
If $input \cup \{top\}$...

Chapter 11

11.1: The Formal Theory of LISP

p. 192, line -1:

The list should have an extra $\rangle$ after the last item.

p. 193, line 9:

langle should be $\langle$.

Section 11.3: The Method of Induction

p. 200, line 15:

This should read $\rightarrow$ *equal(append(a,append(b,c)),append(append(a,b),c))=tt*

Section 11.5: Applications to Arithmetic

p.205, figure 11.2:

...'s should indicate infinite regress, as in figure 11.1 on p.199.

Chapter 13

13.2.1: Creating New Concepts

p.228, line 16:

Correct spelling to *coalescing*

Section 13.2.4: Making Conjectures

p.230, line 7–8 of section:

Split the line thus:
...always the case

- One concept is (almost) ...

Section 13.3: Formalizing the Knowledge

p.231, line -3

Add) after *appendix C*.

p.236, diagram:

bottom left box should be ... *of C'*

Chapter 14

Section 14.6: Meta-Level Knowledge

p.257, lines -11 to -10

This should read
...abandoned as unsatisfiable.

- *Back-up Prevention*: if the goal *mass(part1,M)* is satisfied ...

Chapter 15

p.261, line 4:

Correct spelling to *prefix*

Section 15.2: Skolem Normal Form

p.265, line 4

Correct spelling to *satisfies*

Chapter 16

Section 16.2: Herbrand Interpretations

p.280, line 6 of section:

This should read $\ldots t_1, \ldots t_n \ldots$

Chapter 17

Section 17.4: Building-In Axioms

p.305, line 1 (after figure)

Omit *!*

Appendix IV.Solutions to the Exercise

Solutions to Chapter 4

p. 371, Exercise 13:

first line should read
$X^0 = s(0)$

Solutions to Chapter 7

p.374, Exercise 22:

For *idempotent(G)* read *exponent(G,2)* throughout.

Solutions to Chapter 11

Exercise 36:

6th line should read:
by repeated use of the rewrite rule: $X + Y \Rightarrow cases$...

Exercise 41:

First occurrence of *Ans* should read *Ans1*
Second occurrence of *Ans* should read *Ans2*

Exercise 42:

Should read:
All occurrences of $=$ are object-level...
then $=$ in occ(X, A=B) should be labelled o, the other $=$ in the same line should be labelled m; remaining $=$ signs on that page labelled o. Omit last line.

Solutions to Chapter 15

Exercise 49:

$<$ should be $\leq$.

Solutions to Chapter 16

p. 384, Exercise 55

Clauses 1. and 2. are in answer to part (a); clauses 3. and 4. are in answer to part (b). For part (c), take 4. as top clause, *etc.*