Sets Logic and Maths for Computing, **Second Edition 2012** **Errata etc. Last updated 08.05.2015** All contributions gratefully received		
Page	**Item**	**Thanks to**
3	*Missing bit of answer*: In the answers to Exercise 1.2.1, add the inclusion $C \subseteq F$.	Alex Bendig 25.03.2015
45	*Numbering*: Exercise 2.5.1 is wrongly numbered – should be called Exercise 2.5.2 (Exercise 2.5.1 is on the preceding page).	LSE class 2014-5
54	*Formatting*: In the displayed definition of A_{n+1}, close up space after R in $R(A_n)$.	DM 06.05.15
55	*Numbering*: In Exercise 2.4 (a), insert the numeral "(iii)" after the last comma.	
56	*Redundancy*: Exercise 2.6 (c) should read "Show that every acyclic relation is asymmetric" (the condition of transitivity is redundant).	Luc Batty 03.05.15
77	*Typo*: Exercise 3.2 (b) and (c): In the second line of (b) and in (c) all occurrences of A should be X.	LSE class 2014-5
81	*Typo*: In line 4 of section 4.2.1 delete the word "even".	LSE class 2014-5
82	*Typo*: In the paragraph above section 4.2.2, replace the word "underlined" by "italicised".	DM 06.05.15
84	*Typo*: In the last paragraph on the page, first line, replace "use" by "we use".	DM 06.05.15
85	*Formatting*: In Exercise 4.2.2 (4)(a), insert space between "Do" and "what".	DM 06.05.15
87	*Formatting*: In the second line of the display, insert space between "the" and "induction".	DM 06.05.15
92	*Typo*: In the first line of the first display, delete redundant brackets around $m \cdot 0$.	DM 06.05.15
102	*Clarification*: In the definition of an infinite descending chain, the a_i need not all be distinct. So, for example, a finite cycle $a_1 < a_2 < \ldots < a_n < a_1$ is also counted as an infinite descending chain.	Rick Greer 26.06.12
104	*Oversight*: In Exercise 4.7.1 (3) (d), add the requirement	LSE class 2014-5

	"non-empty" before "well-ordered set".	
107	*Oversight*: In the paragraph "This is a very useful way…", the set A should be $\{n: 0 \leq n \leq 25\}$ since we are numbering the 26 letters of the alphabet from 0, not from 1.	DM 06.05.15
109	*Formatting*: In Exercise 4.2 (a) line 2 italic N should be bold $\mathbf{N}$.	DM 06.05.15
110	*Error*: In Exercise 4.4 (e), one can justify the principle of structural induction by *simple* induction over the natural numbers.	DM 06.05.15
215, 241,275	*Typo*: Ben-Ari (not Ben-Ami) is the author. A third, revised edition appeared in 2012, published by Springer.	Rick Greer 26.06.12
232	*Typo*: Line 6 from bottom, delete "be".	DM 29.06.12
243	*Typo*: Line 3 from bottom, "three" instead of "four".	DM 29.06.12
244	*Improved formulation*: In paragraph 3 line 1 replace "and" by "since it".	DM 29.06.12
259	*Formatting*: In the flattened version of disjunctive proof, no need to italicize "suppose".	DM 29.06.12

Remarks on notation

Logical implication

The notion of tautological implication and tautological equivalence are introduced in chapter 8 (also mentioned in occasional asides earlier). The notations used for these relations, and for their first-order counterparts in chapter 9, are $\vdash$ and $\dashv\vdash$ respectively. This is rather non-standard. Those symbols are usually used for syntactically defined relations of derivability and equivalence in a given axiomatization of logic, which are then shown, in soundness and completeness theorems, to coincide with the semantically defined ones, usually written $\vDash$ and $\Dashv\vDash$. In this book we do not consider axiomatizations of logic, and so no confusion can arise internally. But students will evidently be reading other books, and experience has shown the author that the different notations can confuse them. In any third edition, the author plans to replace the single-bar gates by the double-bar ones throughout the entire text.

Substitution

Section 9.3.2 introduces the notion of the result of substituting a term t for all free occurrences of a variable x in a formula α. This is written, in a fairly standard way, as $\alpha[t/x]$. However, classroom experience has shown the author that this notation does not grab the student's mind well, and that they tend to confuse which of the two terms is being substituted for which. A much more intuitive notation, taken from computer science, is $\alpha_{x:=t}$ where the subscript $x{:=}t$ corresponds naturally to the (non-symmetric) procedure of unplugging the variable x and plugging in t. In any third edition, the author plans to use that notation.