

Errata to *Mechanical Logic in the Three-Dimensional Space*

G. Auletta

Chapter 1

1. Page 37, Table 1.27, row 33, column 1, should read 10011011
2. Pages 43–48, replace Tables 1.31 and 1.32 by a single table (where I have corrected some typos and simplified most of the expressions: note that this does not affect other parts of the book, like Table 8.19, since in that context the more complex expressions are to prefer):

1	11110000	11111000 × 11110100 × 11110010 × 11110001	$[\neg X \wedge \neg(Y \leftrightarrow Z)] \vee (\neg Y \wedge \neg Z)$
2	11101000	11111000 × 11101100 × 11101010 × 11101001	$\neg X$
3	11100100	11110100 × 11101100 × 11100110 × 11100101	$(\neg X \wedge \neg Z) \vee (\neg Y \wedge Z)$
4	11100010	11110010 × 11101010 × 11100110 × 11100011	$(\neg X \wedge \neg Y) \vee (Y \wedge \neg Z)$
5	11100001	11110001 × 11101001 × 11100101 × 11100011	$[Y \wedge (X \leftrightarrow Z)] \vee (\neg X \wedge \neg Y)$
6	11011000	11111000 × 11011100 × 11011010 × 11011001	$(\neg X \wedge Z) \vee (\neg Y \wedge \neg Z)$
7	11010100	11110100 × 11011100 × 11010110 × 11010101	$\neg Y$
8	11010010	11110010 × 11011010 × 11010110 × 11010011	$(X \wedge \neg Y) \vee (X \wedge \neg Z)$
9	11010001	11110001 × 11011001 × 11010101 × 11010011	$[X \wedge (Y \leftrightarrow Z)] \vee (\neg X \wedge \neg Y)$
10	11001100	11101100 × 11011100 × 11001110 × 11001101	$[Z \wedge \neg(X \leftrightarrow Y)] \vee (\neg X \wedge \neg Y)$
11	11001010	11101010 × 11011010 × 11001110 × 11001011	$[Y \wedge \neg(X \leftrightarrow Z)] \vee (\neg X \wedge \neg Y)$
12	11001001	11101001 × 11011001 × 11001101 × 11001011	$(Y \wedge Z) \vee (\neg X \wedge \neg Y)$
13	11000110	11100110 × 11010110 × 11001110 × 11000111	$[X \wedge \neg(Y \leftrightarrow Z)] \vee (\neg X \wedge \neg Y)$
14	11000101	11100101 × 11010101 × 11001101 × 11000111	$(X \wedge Z) \vee (\neg X \wedge \neg Y)$
15	11000011	11100011 × 11010011 × 11001011 × 11000111	$X \leftrightarrow Y$
16	10111000	11111000 × 10111100 × 10111010 × 10111001	$(\neg Y \wedge \neg Z) \vee (\neg X \wedge \neg Y)$
17	10110100	11110100 × 10111100 × 10110110 × 10110101	$(\neg X \wedge \neg Z) \vee (X \wedge \neg Y)$
18	10110010	11110010 × 10111010 × 10110110 × 10110011	$\neg Z$
19	10110001	11110001 × 10111001 × 10110101 × 10110011	$[X \wedge \neg(Y \leftrightarrow Z)] \vee (\neg X \wedge \neg Z')$
20	10101100	11101100 × 10111100 × 10101110 × 10101101	$[Z \wedge \neg(X \leftrightarrow Y)] \vee (\neg X \wedge \neg Z)$
21	10101010	11101010 × 10111010 × 10101110 × 10101011	$[Y \wedge \neg(X \leftrightarrow Z)] \vee (\neg X \wedge \neg Z)$
22	10101001	11101001 × 10111001 × 10101101 × 10101011	$(Y \wedge Z) \vee (\neg X \wedge \neg Z)$
23	10100110	11100110 × 10110110 × 10101110 × 10100111	$[X \wedge \neg(Y \leftrightarrow Z)] \vee (\neg X \wedge \neg Z)$
24	10100101	11100101 × 10110101 × 10101101 × 10100111	$X \leftrightarrow Z$
25	10100011	11100011 × 10110011 × 10101011 × 10100111	$(X \wedge Y) \vee (\neg X \wedge \neg Z)$
26	10011100	11011100 × 10111100 × 10011110 × 10011101	$[Z \wedge \neg(X \leftrightarrow Y)] \vee (\neg Y \wedge \neg Z)$
27	10011010	11011010 × 10111010 × 10011110 × 10011011	$[Y \wedge \neg(X \leftrightarrow Z)] \vee (\neg Y \wedge \neg Z)$
28	10011001	11011001 × 10111001 × 10011101 × 10011011	$Y \leftrightarrow Z$
29	10010110	11010110 × 10110110 × 10011110 × 10010111	$[X \wedge \neg(Y \leftrightarrow Z)] \vee (\neg Y \wedge \neg Z)$
30	10010101	11010101 × 10110101 × 10011101 × 10010111	$(X \wedge Z) \vee (\neg Y \wedge \neg Z)$
31	10010011	11010011 × 10110011 × 10011011 × 10010111	$(X \wedge Y) \vee (\neg Y \wedge \neg Z)$
32	10001110	11001110 × 10101110 × 10011110 × 10001111	$[X \wedge \neg(Y \leftrightarrow Z)] \vee [\neg X \wedge (Y \leftrightarrow Z)]$
33	10001101	11001101 × 10101101 × 10011101 × 10001111	$[\neg X \wedge (Y \leftrightarrow Z)] \vee (X \wedge Z)$
34	10001011	11001011 × 10101011 × 10011011 × 10001111	$[\neg X \wedge (Y \leftrightarrow Z)] \vee (X \wedge Y)$
35	10000111	11000111 × 10100111 × 10010111 × 10001111	$[\neg Y \wedge (X \leftrightarrow Z)] \vee (X \wedge Y)$
36	01111000	11111000 × 01111100 × 01111010 × 01111001	$[\neg X \wedge (Y \vee Z)] \vee (X \wedge \neg Y \wedge \neg Z)$
37	01110100	11110100 × 01111100 × 01110110 × 01110101	$[\neg Y \wedge (X \vee Z)] \vee (\neg X \wedge Y \wedge \neg Z)$
38	01110010	11110010 × 01111010 × 01110110 × 01110011	$[\neg Z \wedge (X \vee Y)] \vee (\neg X \wedge \neg Y \wedge Z)$

39	01110001	11110001 × 01111001 × 01110101 × 01110011	$[\neg X \wedge \neg(X \leftrightarrow Y)] \vee [X \wedge (X \leftrightarrow Y)]$
40	01101100	11101100 × 01111100 × 01101110 × 01101101	$[\neg X \wedge (Y \vee Z)] \vee (\neg Y \wedge Z)$
41	01101010	11101010 × 01111010 × 01101110 × 01101011	$[Y \wedge (\neg X \vee \neg Z)] \vee (\neg X \wedge Z)$
42	01101001	11101001 × 01111001 × 01101101 × 01101011	$[\neg X \wedge \neg(Y \leftrightarrow Z)] \vee (Y \wedge Z)$
43	01100110	11100110 × 01110110 × 01101110 × 01100111	$\neg(Y \leftrightarrow Z)$
44	01100101	11100101 × 01110101 × 01101101 × 01100111	$[\neg X \wedge \neg(Y \leftrightarrow Z)] \vee (X \wedge Z)$
45	01100011	11100011 × 01110011 × 01101011 × 01100111	$[\neg X \wedge \neg(Y \leftrightarrow Z)] \vee (X \wedge Y)$
46	01011100	11011100 × 01111100 × 01011110 × 01011101	$[\neg Y \wedge (X \vee Z)] \vee (\neg X \wedge Z)$
47	01011010	11011010 × 01111010 × 01011110 × 01011011	$\neg(X \leftrightarrow Z)$
48	01011001	11011001 × 01111001 × 01011101 × 01011011	$[\neg Y \wedge \neg(X \leftrightarrow Z)] \vee (Y \wedge Z)$
49	01010110	11010110 × 01110110 × 01011110 × 01010111	$[\neg Y \wedge (X \vee Z)] \vee (X \wedge \neg Z)$
50	01010101	11010101 × 01110101 × 01011101 × 01010111	$[\neg Y \wedge \neg(X \leftrightarrow Z)] \vee (X \wedge Z)$
51	01010011	11010011 × 01110011 × 01011011 × 01010111	$[\neg Y \wedge \neg(X \leftrightarrow Z)] \vee (X \wedge Y)$
52	01001110	11001110 × 01101110 × 01011110 × 01001111	$[X \wedge \neg(Y \leftrightarrow Z)] \vee (X \leftrightarrow Z)$
53	01001101	11001101 × 01101101 × 01011101 × 01001111	Z
54	01001011	11001011 × 01101011 × 01011011 × 01001111	$[Y \wedge (X \vee Z)] \vee (\neg X \wedge Z)$
55	01000111	11000111 × 01100111 × 01010111 × 01001111	$[X \wedge (Y \vee Z)] \vee (\neg Y \wedge Z)$
56	00111100	10111100 × 01111100 × 00111110 × 00111101	$\neg(X \leftrightarrow Y)$
57	00111010	10111010 × 01111010 × 00111110 × 00111011	$[Y \wedge (\neg X \vee \neg Z)] \vee (X \wedge \neg Z)$
58	00111001	10111001 × 01111001 × 00111101 × 00111011	$[\neg Z \wedge \neg(X \leftrightarrow Y)] \vee (Y \wedge Z)$
59	00110110	10110110 × 01110110 × 00111110 × 00110111	$[X \wedge (\neg Y \vee \neg Z)] \vee (Y \wedge \neg Z)$
60	00110101	10110101 × 01110101 × 00111101 × 00110111	$[\neg Z \wedge \neg(X \leftrightarrow Y)] \vee (X \wedge Z)$
61	00110011	10110011 × 01110011 × 00111011 × 00110111	$[\neg Z \wedge \neg(X \leftrightarrow Y)] \vee (X \wedge Y)$
62	00101110	10101110 × 01101110 × 00111110 × 00101111	$[X \wedge \neg(Y \leftrightarrow Z)] \vee (X \leftrightarrow Y)$
63	00101101	10101101 × 01101101 × 00111101 × 00101111	$[Z \wedge (X \vee Y)] \vee (\neg X \wedge Y)$
64	00101011	10101011 × 01101011 × 00111011 × 00101111	Y
65	00100111	10100111 × 01100111 × 00110111 × 00101111	$[X \wedge (Y \vee Z)] \vee (Y \wedge \neg Z)$
66	00011110	01111110 × 01011110 × 00111110 × 00011111	$[Y \wedge \neg(X \leftrightarrow Z)] \vee (X \wedge \neg Y \wedge \neg Z)$
67	00011101	10011101 × 01011101 × 00111101 × 00011111	$[Z \wedge (X \vee Y)] \vee (X \wedge \neg Y)$
68	00011011	10011011 × 01011011 × 00111011 × 00011111	$[Y \wedge (X \vee Z)] \vee (X \wedge \neg Z)$
69	00010111	10010111 × 01010111 × 00110111 × 00011111	X
70	00001111	10001111 × 01001111 × 00101111 × 00011111	$[Z \wedge \neg(X \leftrightarrow Y)] \vee (X \wedge Y)$

Tab. 1: The 70 statements of Level 4-4Level 4-4 (derived from above).

Chapter 2

1. Page 96, caption of Fig. 2.1: Replace

Above the dashed line any couple of statements represent a contrariety (both can be false) whilst below the dashed line any couple of statements can be contrary (both can be true).

by

Above the dashed line the whole of the statements represent a contrariety (they can be all false) whilst below the dashed line the whole of the statements can be contrary (they can be all true).

Chapter 8

1. Page 315, Table 8.17, 2nd row, should read

7 7 7 8 7 8 8 8