Found - Errata

Book of proof (sent to author):

1. **1.8.11 (Found by Tom)**
   The answer is wrong, the reverse is true.
2. **Page 60 (Found by Jad)**
   "17,576,000 possible standard license plates" is wrong, one zero is missing, it should be "175,760,000".
3. **3.3.5 (Found by Jad)**
   The answer has the right equation, but the wrong numerical answer, C(16, 7) is 11440.
4. **Page 63 (Found by Tom)**
   "This gives a total of $7^3 + 7^3 + 7^3 + 7^3 = 1373$ lists" Should be 1372.
5. **Page 66 (Found by Tom)**
   Exercises for 3.2, #7: The problem, as stated, assumes that the odd numbered digits must all occur to the left of the even numbered digits, but in the answer it says that this ordering can be reversed, giving us a total of 5760 combinations, rather than 2880 (which I believe it should instead be.)
6. **Page 89 (Found by Tom)**
   Exercise 3.5#3: In the back of the book, it states that a part of the solution is 9*10*10*5 = 450; whereas it should be 4500.
7. **Page 234 - Proof for Chapter 4, Exercise 9 (Found by Tom)**
   The proof introduces a variable 'e', but then after that uses 'd' in its place, incorrectly.
8. **Page 232 - 3.5#5 (Found by Jad)**
   2^4 should be 2^5
9. **Page 239 - Proof for Chapter 5, Exercise 27 (Found by Tom)**
   The result for the second case should be 2k(4k+1), rather than 2k(4k-1)
10. **Page 86 (Found by Jad)**
    Line 2: 'We must to show' should be 'We must show'
11. **Page 133, Ex. 8.23 (Found by Jad)**
    There is an extra parenthesis at the end of the second line.
12. **Page 153, 9.27 (Found by Tom)**
    Claims there there exist no numbers for which equation is true, but is trivially so for c = 1, with a and b chosen arbitrarily
13. Not really and erratum but Example 10.6 is very sterile, lacks explanation of the train of thought and the way to come up with such a proof. (Jad)
14. **Ex. 10.21**
    The parenthesis is wrong, it is the sum of the first 2^n terms.
15.

Linear Algebra (Hefferon) (sent to author http://code.google.com/p/linear-algebra/source/browse/Acknowledgements):

1. 1.III.1 (Jad)
   "but the argument does not ruled out"
2. **Answer for One.III.2.20:** (Tom)
   Incorrectly indexing LHS of second equation by l1, rather than l2:

> **One.III.2.20**   (a) In the equation
> $$\rho_i = c_1\rho_1 + c_2\rho_2 + \ldots + c_{i-1}\rho_{i-1} + c_{i+1}\rho_{i+1} + \ldots + c_m\rho_m$$
> we already know that $c_1 = 0$. Let ℓ_2 be the column number of the leading entry of the second row. Consider the prior equation on entries in that column.
> $$\rho_{i,\ell_1} = c_2\rho_{2,\ell_2} + \ldots + c_{i-1}\rho_{i-1,\ell_2} + c_{i+1}\rho_{i+1,\ell_2} + \ldots + c_m\rho_{m,\ell_2}$$

3. 1.III.1 (Jad)
   I think I found an Erratum, there is a rule about the echelon system that is not mentioned at all, any zero rows have to come after any non-zero rows, I found this by generating such 'illegal' possibilities while solving exercise 1.III.1.11 and discussing them with Tom.
4. Chapter 1, topic: Input-Output Analysis, 3.a (Jad)
   1. the correct numbers are 1.28/14.27 and 9.87/14.87 and not 4.87. The answer is consequently also wrong.
5. Page 106 (Jad): a linearly independent sets is maximal if and only if
6. Page 62 in solutions (exercise 2.32 Vector Space / Basis) (Jad) : if we want to be really rigorous, the book solution is incomplete, it does not treat the case where the set formed by the union of bases has less than 6 elements, which is a trivial case but needs to be included.
7. pg 127: (Tom)

✓ **3.19** Find a basis for the row space of this matrix.

$$\begin{pmatrix} 2 & 0 & 3 & 4 \\ 0 & 1 & 1 & -1 \\ 3 & 1 & 0 & 2 \\ 1 & 0 & -4 & -1 \end{pmatrix}$$

vs.

Two.III.3.19 A routine Gaussian reduction

$$\begin{pmatrix} 2 & 0 & 3 & 4 \\ 0 & 1 & 1 & -1 \\ 3 & 1 & 0 & 2 \\ 1 & 0 & -4 & 1 \end{pmatrix} \xrightarrow[-(1/2)\rho_1+\rho_4]{-(3/2)\rho_1+\rho_3} \xrightarrow{-\rho_2+\rho_3} \xrightarrow{-\rho_3+\rho_4} \begin{pmatrix} 2 & 0 & 3 & 4 \\ 0 & 1 & 1 & -1 \\ 0 & 0 & -11/2 & -3 \\ 0 & 0 & 0 & 0 \end{pmatrix}$$

Note that the entry in the lower right has flipped signs.

8. Page 140, Crystals Topic, (Jad&Tom)
    1. The correct basis is (1.42,0) , (1.23,0.71). The suggested basis does not make geometric sense.
    2. Also of note (Jad) Pg 139 'Remarkably, the explanation for the cubical external shape is the simplest one: the internal shape, the way the atoms lie, is also cubical.' is not a very logical sentence the local structure cannot be the explanation for the packing, you can very well construct a sphere from lego cubes ...
    3. Also of note (Jad&Tom) Integers are not a field! additionally, the suggested basis for graphite can produce atoms that are not there e.g: the coordinates: (0,1).
9. Chapter III, Representing linear maps with matrices, exercise 1.30(c) page 201 (Jad)
    1. [{ 0 }] should be [{}]
10. Page 217 (Jad), Exercise 2.34b, "+ I" should be "+ c0.I"
    1. note that we Tom found one on page 127, and this one is one page 217 :P
11. Page 226 (Jad), Exercise 3.45 (a), vector y dot vector y= vector 0, this is wrong, the zero on the right side is a scalar.
12. Page 249 (Jad), Exercise 1.10, the transformation of the projection (x1,x2) -> (a, b) has a and b reversed, the upper row should be 3 times the lower row, and not the reverse.
13. Page 249 (Jad) Ex 1.20, "mapping to plane to itself" should read "from plane"
14. Page 253 (Jad), Exercise 2.16, for completeness the question should require to find a vector that is not the zero vector.
15. (Jad), Erratum in the solution manual, Page 169, Four.I.3.23, 'False' is correct, but the example given is wrong, the question does not allow a '-1'.
16. Page 358 (Jad), 3.13 example, V3 = { -b/pi - 3, b }, should be V3 = { -b/(pi - 3), b }
17. Page 362 (Jad), A linear transformations.
18. Page 362 (Jad), footnote: 'function interation'
19. Answer for Five.II.3.40 (Jad), the characteristic polynomial is wrong, it should be: -x3 - 5x2 - 6x. Nevertheless, The eigenvalues are correct.
20. Page 376 (Jad), Ex. 2.17 (Jad), the operator (x,y,z)->(0,x,y) is a right-shift operator, while the exercise calls it left-shift.
21. Page 389 (Jad), 'partwe' should 'part. We'
22. Page 381 (Jad). k(x2 + (λ1 + λ2)x + λ1λ2) should be k(x2 + (-λ1 - λ2)x + λ1λ2)

Zakon - Basic Concepts of Mathematics: (Jad)

1. Page 22 Ex.17.(iv), missing parenthesis and index of Bi family.
2. Page 26, Ex. 3 (ii) is followed by (ii), should be (iii)
3. Page 87, Corollary 3. "By Corollary 1, there are integers ≤ x." This is not true, Corollary 1 only guarantees integers < x, and not <= x. The result is that the proof is a bit wrong and actually proves "n < x ≤ n + 1." instead of the claimed "n ≤ x < n + 1.". This can be fixed easily by starting from "By Corollary 1, there are integers > x."
4. Page 90, "An element of an ordered field"
5. Page 92, "(r-p)(r^(n1)..." should be "(r-p)(r^(n-1)..."
6. Page 48, Ex.5 hint. "f(x_n)=x_x+1" should be "f(x_n)=x_n+1"

Wedderburn - Lectures on Matrices: (Jad)

1. Page 4, the second centered formula just above formula (8), the second summation in the two nested summations should run over index j and not p.
2.

Ian Bruce, http://www.17centurymaths.com (Jad)

1. http://www.17centurymaths.com/contents/euler/diffcal/part1ch1.pdf
    1. "Moreover these forms of the differences are to be noted properly, since they offer the maximum use in infinite analysis"

2. http://www.17centurymaths.com/contents/napier/ademonstratiobookone.pdf
    1. The title of the pdf (metadata) seems to mention HUYGENS as the author.

Spivak - Calculus (Jad)

1. Page 495, Definition of a real number, point (4), 'There is no greatest element in a' should be '... in alpha'.

D.E Joyce, Euclid's Elements website (Jad)

1. "One is needed for this proposition to justify the existence of the two points C and E" should be "G and E" (http://aleph0.clarku.edu/~djoyce/java/elements/bookI/propI12.html)

Steele - The Cauchy-Schwartz Master Class (Jad)

1. Page 143, "L(a+b,w) = L(b,w) + ... " should be "L(a+b,w) = L(a,w) + ... "

Kline - Mathematical Thought, From Ancient to Modern Times (Jad)

1. Vol I. Pg. 293, Figure 14.8. Erratum 1: There are two P points, the left one should be F. Erratum 2: Point R should be K.
2. Vol I. Pg 321. "Earlier in Book II Descartes observes that one equation in three unknowns for the determination of the typical point C of a locus represents a plane, a sphere, or a more complex surface." There is missing text after 'three unknowns', per example 'is necessary'.

Meschowski - Problem-Geschichte der Mathematik (Jad)

1. Vol.2, p.73 eqn. (8) 1/6.6 should be 1/5.6

Hairer - Analysis by Its History (Jad)

1. page.156, line 3, formula (9.5) $h.y_n$ should be $h.y'_n$.
2. page.207, line 13, the interval should read [0,1] and not [0.1].

Jammer - Concepts of Simultaneity (Jad)

1. p.66, line 2. "since a person does not do what he does not know how to do ~~it~~".

Wussing - The Genesis of the Abstract Group Concept (Jad)

1. Pg.196, line 12, "in the form given it", should be "in the form given to it".

MacLanne/Birkhoff - Algebra, 3rd edition (Jad)

1. Pg.44, "0->2=2^1" should be "1->2=2^1"

Introduction to Differential and Algebraic Topology (Jad)

1. Pg.5 Par.2 'development of <the> algebraic'

KUHN, H.W. (1976). Nonlinear programming: A historical view (Jad)

1. Pg. 16, "That motiviated Fritz John"
2. Pg. 13, Kirkhoff should be Kirchhoff (not sure, maybe there are two ways to write it)

Cottle, Richard, Jong-Shi Pang, and Richard E. Stone. The Linear Complementarity Problem. (Jad)

1. Pg. 700, "positive semi-defininte LC"

Katta G. Murty. Linear Complementarity, Linear and Nonlinear Programming. (Jad)

1. Pg. 276, for at least on i satisfying qi < 0.

Steven Weintraub, Differential Forms 2014. (Jad)

1. Pg. 30, 'then it is' should be 'than it is'
2. Pg. 110, 'a function S defined on N' should be 'a function f defined on S'
3. Pg. 4, 'what they really should be doing is considering <constant> tangent vector fields.
4. Pg. 52, 'Let A1(x1,...,xn),...,A1(x1, ...', the second A1 should be An.

Katz, A Burgessian critique of nominalistic tendencies in contemporary mathematics and its historiography. (Jad)

1. Could analysis could have developed
2. It may <be> true that "epsilontics"

Wilcox-Meyers, An Introduction to Lebesgue Integration and Fourrier Series (Jad)

1. Pg. 9, am<a>thematicians.

Boothby, An Introduction to Differentiable Manifolds and Riemannian Geometry 2012. (Jad)

1. Pg. 32, " by $\sum$(i from 1 to n) $\alpha_i(\delta/\delta x^i)$ " should use α^i and not α_i .

Dales et al. Truth in Mathematics (1998) (Jad)

1. Pg. 31 "L containes"

Lee, Introduction to Smooth Manifolds (Second Edition) (Jad)

1. Pg. 55 "To relate the abstract tangent spaces we have defined on manifolds to geometric tan- gent spaces in R^n". Maybe this wants to say: 'To relate the abstract tangent spaces we have defined on manifolds the geometric tangent spaces in $R^{n'}$

Sadun, Applied Linear Algebra (Second Edition) (Jad)

1. Pg. 135, "he has a 1/3 chance of landing on pad k+1, a 1/3 chance of landing on pad k+1", should be k-1.

Geuvers, Nederpelt, Type Theory and Formal Proof: An Introduction (Jad)

1. "this is as follows: T = V | (T -> T)"

Axler, Linear Algebra Done Right (Third Edition) (Jad)

1. **Pg. 7** "and replace the Fana 2 or 3 with an arbitrary", Fana?