


Errata: Matrix Algebra - Karim M. Abadir, Jan R. Magnus (2005)

 Errata Update: October 7, 2014

Original document: janmagnus.nl/misc/corrections03.pdf

This document (19th November, 2024): github.com/zekiakyol/compact-erratas

📍 Location	✍ Correction
Page 69, Exercise 5.53	From line 4 to line 12, each occurrence of \mathbf{x} (but not of \mathbf{x}_n and \mathbf{x}_m) should be replaced by \mathbf{y} .
Page 86, Exercise 4.27	The solution to (a) should read: (a) The matrix $ \mathbf{A} $ is nonsingular because $\text{rk}(\mathbf{A}) = \text{rk}(\mathbf{A}'\mathbf{A}) = \text{rk}(\mathbf{I}_n) = n$.
Page 118, Exercise 5.40	In the displayed formula in the exercise, $ A $ should be boldface: $ \mathbf{A} $.
Page 141, Exercise 6.19	Line 4 in the solution runs over the margin.
Page 167, Exercise 7.25	In the first line of the solution to (c), replace “latter” by “former”.
Page 198, Exercise 7.78	In the first display of the solution to (d), the second matrix should be preceded by $\mathbf{A}_{(4)} :=$.
Page 199, Exercise 7.79	In the second line from the bottom, Exercise 7.78 is employed (not 7.77 as written).
Page 206, Exercise 7.91	Line 2 in the exercise: delete comma after displayed matrix \mathbf{A} .
Page 215, Exercise 8.10	Line 1 in the solution runs over the margin.
Page 220, Exercise 8.23	<p>The solution is not as tight as it should be. The correct solution reads as follows.</p> <p>Solution</p> <p>Since \mathbf{A} is positive definite, Exercise 8.22 implies that $\mathbf{A} = \mathbf{B}\mathbf{B}'$ where \mathbf{B} is square. Since \mathbf{A} has full rank, so has \mathbf{B} (Exercise 4.13(d)). By the QR decomposition, (Exercise 7.35), we can write $\mathbf{B}' = \mathbf{Q}\mathbf{L}'$, where \mathbf{Q} is orthogonal and \mathbf{L} is lower triangular with positive diagonal elements. Hence, $\mathbf{A} = \mathbf{B}\mathbf{B}' = \mathbf{L}\mathbf{Q}'\mathbf{Q}\mathbf{L}' = \mathbf{L}\mathbf{L}'$.</p>
Page 239 Exercise 8.69	<p>The last two lines of the solution should be replaced by:</p> <p>Now premultiply both sides by $\mathbf{V}^{-1/2}$ and postmultiply both sides by $(\mathbf{X}'\mathbf{X})^{-1}$.</p> <p>Upon transposing, we obtain the required equality. (Compare Exercise 12.29.)</p>
Page 245, Chapter 9, Intro	Last line: “theeigenvalues” should be “the eigenvalues”.
Page 253, Exercise 9.11	<p>Line 1 should read: “Let \mathbf{C} and \mathbf{D} be two real $n \times n$ matrices, ...”.</p> <p>The reason for restricting \mathbf{C} and \mathbf{D} to be real (which is only needed for part (a)) is that the logarithmic function is multiple-valued, even in the case of a scalar complex variable. Taking logarithms on both sides of an equation, the equality may not hold anymore if the principal value is taken on both sides.</p>
Page 322-323, Exercise 12.1	<p>In the solution to b), second line: $(1/bb')bb'$ should read $(1/b'b)bb'$.</p> <p>Also, in the solution to c), third line from the end: “if and only” should read “if and only if”.</p>
Page 366, Exercise 13.25	Line 5 from bottom: At the end of the formula giving $D\mathbf{F}(\mathbf{X})$, the differential $d\text{vec}(\mathbf{X})$ should be removed.
Page 373, Exercise 13.38	Last line: “ $d\text{vec}(\mathbf{Y}) = \mathbf{D}^+ d\text{vec}(\mathbf{Y}) = \dots$ ” should be: “ $d\text{vech}(\mathbf{Y}) = \mathbf{D}^+ d\text{vech}(\mathbf{Y}) = \dots$ ”.
Page 383, Exercise 13.53	Line 9: displayed formula should end with full stop (.)
Page 384, Exercise 13.56	<p>Line 1: “Then, since $\mathbf{R}'\boldsymbol{\beta} = \mathbf{c}$, we find the solution for \mathbf{l} as” should be:</p> <p style="padding-left: 40px;">“Then, denoting the constrained solution by $(\tilde{\boldsymbol{\beta}}, \tilde{\mathbf{l}})$, we have $\mathbf{R}'\tilde{\boldsymbol{\beta}} = \mathbf{c}$, and hence”</p> <p>Line 4: $\mathbf{X}\boldsymbol{\Omega}^{-1}\mathbf{X}$ should be $\mathbf{X}'\boldsymbol{\Omega}^{-1}\mathbf{X}$.</p>
Page 408, Appendix A.3.4	Line 17: the formula $f^{(n)}(c)(x - c)^n/n!$ should read $f^{(n)}(c)(x - b)^n/n!$.