Erratum to: A Concise Introduction to Linear Algebra

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Erratum to:
G Schay, *A Concise Introduction to Linear Algebra*, https://doi.org/10.1007/978-0-8176-8325-2

Due to mostly post-production errors, a number of author corrections were not incorporated into the first edition of this book. With the author's approval, the following amendments have been made to the text, as well as fixes for other small typos. The publisher and the author apologize for these errors.

The following is a list of the substantive corrections that have been made in the 2018 reprinting

- On line 2 of the proof for Theorem 1.1.1., a capital P has been replaced with a lowercase p
- In Equation 1.31, a bolded subscript q has been unbolded and set italic
- The first line of Exercise 1.2.13 has been changed to read "Using the result of Theorem 1.2.6"
- The QED symbol for Example 1.3.3. has been moved to after Equation 1.73
- The paragraph before Definition 2.1.1. has been changed to reflect the fact that a definition for a *pivot* is explained on page 53
- In Fig. 2.6, the θ has been unbolded
- The paragraph after Definition 2.4.1. has been changed to refer to Definition 2.4.1., not Definition 4.2.4.
- The text immediately before the rules in Definition 3.1.1. has been changed to read "*satisfying the eight rules below*[1] *for all* $\mathbf{p}$, $\mathbf{q}$, $\mathbf{r}$, *and real a and b*"

The updated online versions of these chapters can be found at
https://doi.org/10.1007/978-0-8176-8325-2_1
https://doi.org/10.1007/978-0-8176-8325-2_2
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G Schay, *A Concise Introduction to Linear Algebra*,
https://doi.org/10.1007/978-0-8176-8325-2_9,

- The text that ends Example 3.1.1. has been changed to read "was proved in Theorem 1.1.1. for $n = 2$."
- In the proof of Property 3 for Theorem 3.1.1., a 1 has been deleted from the second equation.
- For Equation 3.50, the upper limit of the summations have been specified as m's
- In Definition 3.5.4, the set for all vectors has been changed to $\mathbb{R}^m$
- The sentence before Equation 3.153 now refers to Equations 3.149 and 3.150
- The end of Theorem 3.6.3 now refers to Equation 3.155
- The sentence after Equation 3.164 now refers to Equation 3.155
- In the formula used after Definition 3.6.1 has been changed to refer to Equation 3.150
- Property 4 in Definition 4.2.1 now begins "T *is said to be an isomorphism if it is linear and both one-to-one and onto*."
- The paragraph after Example 4.2.2. now starts "That X and $\mathbb{R}^n$ above are isomorphic"
- The paragraph after Equation 5.37 now refers to $\mathbb{R}^3$
- After Equation 5.41, the author meant to leave the proof of Equation 5.41 for Exercise 5.1.18., not Equation 5.40
- Exercise 5.1.18 now refers to "the normal system of 5.41 of the least-squares plane", rather than 5.40
- Exercise 5.1.22. now asks students to use Equations 5.24 through 5.28
- Exercise 5.1.24 now asks students to use Equations 5.38 through 5.41
- The Proof of Theorem 5.2.1. now reads "Since $\mathbf{x} \in \text{Span}\{\mathbf{a}_1, \mathbf{a}_2, \ldots, \mathbf{a}_n\}$, there exists a decomposition of $\mathbf{x}$ in the form of Equation 5.47 with some coefficients x_{Ai}. Taking the dot product of both sides of Equation 5.47 with $\mathbf{a}_i$ and utilizing the assumed orthogonality $\mathbf{a}_i \cdot \mathbf{a}_j = 0$ for all $i \neq j$, we get Equation 5.48. Also, if we take $\mathbf{x} = 0$, then Equation 5.48 shows that each x_{Ai} equals zero, and so the vectors $\mathbf{a}_1, \mathbf{a}_2, \ldots, \mathbf{a}_n$ are independent."
- The sentence before Corollary 5.2.1. now refers to Equation 5.47
- Part of the paragraph at the bottom of page 212 now reads "the right-hand sides of Equations 5.49 and 5.50" and "in Equation 5.49, $\mathbf{x} \in \text{Span}\{\mathbf{q}_1, \mathbf{q}_2, \ldots, \mathbf{q}_n\}$, but in Equation 5.50, $\mathbf{x}$ may be outside"
- In the first step for the Proof of Theorem 5.2.4., the references to equations are now to Equation 5.58, Equation 5.59, and Equation 5.59, respectively
- The second step for the Proof of Theorem 5.2.4., the references to equations are now to Equation 5.58, Equation 5.58, Equation 5.61, and Equation 5.61, respectively

- The Proof for Theorem 5.2.5., the references to equations are now to Equation 5.57, Equation 5.63, Equation 5.63, Equation 5.49, and Equation 5.63, respectively
- Exercise 5.2.2. now asks students to use Equation 5.50
- Exercise 5.2.5. now asks students to prove Equation 5.52 in a particular case
- The beginning of the MATLAB Exercises for chapter 5 now refers to Equation 5.50
- In the second property for Definition 6.1.1., Equation 6.4 holds for "*any i, j with* $i \neq j$"
- The two sentences before Equation 7.19 now read "Recall that a homogenous equation has nontrivial solutions if and only if its matrix is singular. By Theorem 6.1.8. for Equation 7.17, this condition is equivalent to"
- In the first part of Equation 7.164, α has been replaced with a
- The ψ's in Equation A.32 have been replaced with ϕ's