

Errata for An Illustrative Guide to Multivariable and Vector Calculus.

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The following is a list of corrections to elementary errors appearing in the book. More significant amendments including new material, further worked examples, new figures and additional exercises, will appear in a revised edition.

Chapter 1: Vectors and functions

- (1) On page 7, in Figure 1.7, the vector labels \mathbf{v} and \mathbf{w} at the base of the parallelepiped should be exchanged.
- (2) On page 42, in Mastery Check 1.12, the inequality $x \geq 0$ in the definition of D_f should be replaced by $x > 1$, and the inequality $0 \leq x \leq 2$ should be replaced by $1 < x \leq 2$.
- (3) On page 42, in Mastery Check 1.13, the inequality for x in the definition of D_f should read $|x| \leq 2$.
- (4) On page 45, in Supplementary Problem 1.14, the line beginning “Representation ..” should read “within or coinciding with ..”

Chapter 2: Differentiation of multivariable functions

- (1) On page 77, in Example 2.10, the vector \mathbf{n} should read the vector \mathbf{N} .
- (2) On page 113, in the second last line of the page, the function f should read F .
- (3) On page 123, in Supplementary Problem 2.28, in the line beginning “Establish ..” the 2D point (1.1) should read (1, 1).

Chapter 3: Applications of the differential calculus

- (1) On page 130, at the top of the page, the line beginning “Suppose ..” should read “.. continuous derivatives of at least order 2 (greater than or equal to 2)..”.
- (2) On page 130, at the bottom of the page the derivatives of the single variable function $f(x)$ should be ordinary derivatives: $\frac{d^2 f}{dx^2} \Big|_a$.
- (3) On page 171, in Supplementary Problem 3.1, the function should read

$$f(x, y) = (x + y)e^{-x^2 - y^2}.$$

Chapter 4: Integration of multivariable functions

- (1) On page 181, in the sentence immediately following Figure 4.4, the surface equation should read $z = f(x, y)$.
- (2) On page 187, a superfluous closing bracket “)” should be deleted from the end of Mastery Check 4.1.
- (3) On page 187, a superfluous closing bracket “)” should be deleted from the end of Mastery Check 4.2.

- (4) On page 197, in Mastery Check 4.5 an opening bracket “(” should be inserted in the domain D .
- (5) On page 207, in Figure 4.21, the integration strip in the left hand figure should be rotated 90 degrees to agree with the orientation in the right hand figure.
- (6) On page 211, at the bottom of the page, the transformation should read

$$\tau : \mathbb{R}^3 \longrightarrow \mathbb{R}^3; \quad \mathbf{u} \mapsto \mathbf{g}(\mathbf{u}) = \mathbf{x}.$$

Chapter 5: Vector calculus

- (1) On page 297, in Supplementary Problem 5.24, the equation of the ellipsoid should read

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1.$$

- (2) On page 300, in Supplementary Problem 5.34, the curve Γ is not closed so the line integral should read $\int_{\Gamma} \mathbf{F} \cdot d\mathbf{r}$.

Bibliography

- (1) On page 305, Reference 1 should read “Adams. R.A.: Calculus. A Complete Course ...”
- (2) On page 306, in Reference 15, author name Feshbach is misspelt.
- (3) On page 306 Reference 19 should read “Dunnington, G.W.: Carl Friedrich Gauss: Titan of Science ...” (Author name is misspelt and title incorrectly represented.)
- (4) On page 306, the category title “A little grammar” is missing a terminating colon “:”.

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