

Errata for the Study Guide for Vector Calculus 4th Edition, 2nd Printing

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This file contains the errata known to us as of the above date for the second printing of the fourth edition of the Study Guide. You can tell if you have the **second printing** of the fourth edition by looking at the bottom of the page opposite the table of contents page. It should say “Second printing, 2000”.

In these errata, “line 3 \uparrow ” means “line 3 from the bottom of the page”.

Chapter 1

Page 12, #13 the figure on the right should have the angle ϕ labeled as the supplementary angle to β along the vertical.

Page 12, line 11 \uparrow the line should read “Note that $\cos \phi \leq 0$. Therefore, $0 \leq -d/(6 \cos \phi) \leq \rho \leq d/2$. So far, ...”.

Chapter 2

Page 29, #7(b) the matrix of partial derivatives should be

$$\begin{bmatrix} e^y & xe^y - \sin y \\ 1 & 0 \\ 1 & e^y \end{bmatrix}$$

Chapter 4

Page 70, #20 there should be a space before “and” in the third line.

Page 72, #12(a) the last line should read “ $(d/dt)(\mathbf{T}(t)) = (d/dt)(1)$, i.e., $2\mathbf{T}(t) \cdot \mathbf{T}'(t) = 0$, which implies that $\mathbf{T}(t) \cdot \mathbf{T}'(t) = 0$.”

Page 73, line 5 should read “and then formally compute”.

Chapter 5

Page 95, line 12 should read “*Cauchy sequence*. A Cauchy sequence is a sequence whose terms ...”.

Chapter 6

Page 106, line 6↑ should read “... applying T to the parallelogram described by $\mathbf{q} = \mathbf{p} + \lambda\mathbf{v} + \mu\mathbf{w}$...”.

Page 106, line 1↑ the last sentence should read “Thus, the image of T is a parallelogram in \mathbb{R}^2 .”

Page 115, line 14 should read “... if the limits of integration are infinite. The difference here ...”.

Page 119, line 3 “The desired volume ...” should be “The desired region ...”.

Page 120, line 2↑ should read “The average temperature is attained wherever $32d^2 = 32$, i.e., $d = 1$. Thus, ...”.

Page 121, line 2 should read “The inequality $(x - 1)^2 + y^2 + z^2 \leq 1$ describes a ball ...”.

Page 121, line 3↑ should read “Jacobian $\rho^2 \sin \phi$. We get”.

Chapter 7

Page 125, line 8 should read “piecewise continuously differentiable. The integration ...”.

Page 127, lines 3 and 4 x_i should be x_j .

Page 128, line 1 should read “*Physical interpretation*. The line integral is most commonly interpreted as the work ...”.

Page 130, line 3 u should be u .

Page 135, line 13 should read “which becomes $1/\sqrt{1 - r^2}$ in polar coordinates. Remembering ...”.

Page 135, line 9↑ should read “... the volume of the coupler is $32\pi/3 - (32\pi/3 - 4\pi/\sqrt{3}) = 4\pi/\sqrt{3}$.”

Page 144, line 2 the comma after the word “line” should be omitted.

Page 144, line 13 \sin should be \sin .

Chapter 8

Page 149, line 9 “... a surface integral:” should be “... a double integral:”.

Page 153, line 16 should read “... over the wire (assuming the wire itself is not deformed).”

Page 158, line 1[†] should read “ \mathbf{G} or any gradient may be added to \mathbf{G} , and $\nabla \times \mathbf{G}$ would still be equal to \mathbf{F} .”

Page 162, line 3 should read “It is obvious that $\|\mathbf{r}\| = \|-\mathbf{r}\| \dots$ ”.

Page 163, line 5 should read “The integrand can be rewritten according to vector identity 8 on page 283 and the fact that $\nabla \times \mathbf{E} = 0$, as”

Page 169, #10(c) should read “Suppose the \mathbf{F} in (a) is a force field \dots ”.

Chapter 9

Page 172, #4(b) should read “Evaluate $\int_{\mathbf{c}} \mathbf{F} \cdot d\mathbf{s}$ for the path \dots ”.

Page 174, #4 should read “Consider the system

$$F_1(u, v, x, y) = u^2 - v^2 + 2x + xy = 0$$

$$F_2(u, v, x, y) = 2u + 3v - 5x^2 = 0''.$$