Errata for Vector Calculus, 5th Edition, 1st Printing

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This file contains the errata known to us as of the above date for the *first printing* of the 5th edition (2003). The *second printing*, in which all these errata are corrected will be released soon.

If you have an earlier printing, please see the book's web sites for the earlier errata list: http://www.cds.caltech.edu/marsden/books/ (and click on *Vector Calculus*).

Historical Introduction

Page xix, Line 6 from the bottom. "del Ferrero" should be "del Ferro"

Page xxi, Line 5 from the bottom. "Revolutionitus" should be "Revolutionibus"

Page xxiv, First line after the figure. "universe square law" should be "inverse square law"

Chapter 1

Page 6, Line 2 of the legend of Figure 1.1.7. The formula should read

$$(a_1, a_2) + (b_1, b_2) = (a_1 + b_1, a_2 + b_2)$$

Page 55. Line 3 after the head "The Maturing of Complex Numbers", $\sqrt{-ai}$ should read $\sqrt{(a)(-1)}$.

Page 57. On this page and elsewhere, 'quaternion' is misspelled as 'quarternion'.

Page 61. Second paragraph and elsewhere, 'Heaveside' should be 'Heaviside'.

Chapter 2

Page 113, Line 2 of the figure legend. "does lie on the graph" should read "does not lie on the graph"

Page 124, First displayed equation. Replace $\lim_{(x,y)\to(0,0)}$ with $\lim_{y\to 0}$

Page 164, Last line of the box. Replace $\nabla f(\mathbf{x}) \cdot \mathbf{v}$ by $\dfrac{d}{dt} f(\mathbf{x} + t\mathbf{v})\Big|_{t=0}$.

Chapter 3

Page 227, Line 2 from the bottom. "the corollary" should be "Theorem 9".

Page 232, Line 24. "its corollary" should be "Theorem 9".

Page 235, Last two lines of the box. Interchange "compute" and "compare"

Page 245, Exercise 26. "Example 11" should be "Example 9"

Chapter 4

Page 296, line 2. "each point $\mathbf{x}_0$" should be "each point $\mathbf{x}$"

Page 272, line 5 from bottom. $\mathbf{F} = \mathrm{m}a$ should read $\mathbf{F} = m\mathbf{a}$

Page 309, line 3 from bottom and page 310, line 2. Insert inner product dots after $\mathbf{i}$, $\mathbf{j}$, and $\mathbf{k}$

Chapter 5

Page 352, 2 lines above the box. The first "equality" should read "inequality"

Chapter 7

Page 429, lines 1 and 2 below the figure. The first sentence should read as follows. Galileo contemplated the following question: does a bead falling under the influence of gravity from a point A to a point B along a curve do so in *the least possible time* if that curve is a circular arc?

Page 431, First displayed equation. The equals sign = should be an approximately equals sign, $\approx$ and $\mathbf{t}_i$ should be t_i

Page 453, line 1 in the box. ***parametrized surface*** should read ***parametrization of a surface***

Chapter 8

Page 525, second and third lines in the box. "its boundary (oriented counterclockwise)" should read "its (positively oriented) boundary"

Page 608, last line. The triple integral after the equal sign should be a double integral

Answers.

Page 621, Section 2.2, Number 9(a). The answer x should be 0 (zero)

Page 636, Section 3.5, Number 5. The formula $\partial F/\partial z = 2x^3z - 3z^2yz$ should read $\partial F/\partial z = 2x^3z - 3z^2yx$

Page 650, Section 6.2, Number 21. The answer is $2\pi[\sqrt{3} - 2\log(1+\sqrt{3}) + \log\sqrt{2}]$

Index.

Page 671. Add "Implicit Function Theorem, p. 251"

Table of Integrals.

Inside back cover. Formula 74 should read $\int \sec x \tan x\, dx = \sec x$ and formula 75 should read $\int \csc x \cot x\, dx = -\csc x$

INSIDE BACK COVER. The **SYMBOLS INDEX** should read as follows.

SYMBOLS INDEX

SYMBOLS ARE LISTED IN ORDER OF THEIR APPEARANCE IN THE TEXT