

Errata for Vector Calculus, Fourth Edition

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Jerrold E. Marsden, marsden@cds.caltech.edu

Anthony J. Tromba, tromba@math.ucsc.edu

This file contains the errata known to us as of the above date for the second printing of the 4th edition, (July, 1996). You can tell if you have the **second printing** of the fourth edition by looking at Page 123: Exercise 12(b) should have a box (signalling a solution in the student guide)—it was missing from the first printing.

If you have the **first printing** of the fourth edition or the third edition, please ask for the corresponding errata list. If you need **hard copies** of any of the errata lists, we can mail them directly to you.

The fourth edition entered its third printing in the summer of 1998 and all of the errata below have been corrected. We are of course grateful for readers who inform us of additional errata.

Covers

on the inside front cover, in differentiation formula 23, add a u to the denominator on the right hand side.

on the inside back leaves, in formula 62, replace “1” in the numerator on the left hand side with “2” and move $\cot x$ from formula 74 to 75.

Chapter 1

Page 11, in the solution to exercise 6, the \mathbf{e} should not be bold.

Page 24, line 10 from the bottom, “chaim” should be “claim”.

Page 67, footnote. Apparently, the results on cross products were already known in *Am. Math Monthly* **74** (1967), 188–194.

Page 73, in Exercise 6, delete one of the zeros in \mathbf{x} .

Chapter 2

Page 109, in Figure 2.2.18(b), add a “2” to the numerator.

Page 126-130, in the bottom display on page 126, the three at the top of 127 and on page 130, v/r should be v/R .

Page 131, line 1 of the box, $\mathbf{c}(t_0)$ should be $\mathbf{c}'(t_0)$ and in line 4, the \mathbf{l} should be italic.

Page 134, line 7, Exercise 25 should be Exercise 29.

Page 139, in the second to last line of the solution to Example 2, replace (ze^{-xz}) by $(-ze^{-xz})$ and in the first display of the solution to Example 3, in the right hand 2 by 2 matrix, replace the upper right hand corner 2 by a 0 (zero).

Page 153, in Exercise 16(c), replace $\sqrt{14e^2}$ by $\sqrt{14}e$.

Chapter 3

Page 181, Exercise 17, section 3.1, replace “differentiable” by C^2 .

Page 190, In the Definition, also call points where f is not differentiable “critical points.”

Page 199, line 4, “Theorem 5” should be “Theorem 6”.

Page 206, In Exercises 36–40, assume u and T are C^2 on the interior and are continuous on the closed disk.

Page 203, 217, with the more general definition of critical point on page 190 as noted above, we can just assume the function in Theorem 8 is continuous. One can similarly fuss with Theorem 8’.

Chapter 4

Page 256, in the display in Example 1, the square root should not extend over the dt .

Page 260, in the definition of arc length, assume that the path is piecewise C^1 with derivative bounded on each of the pieces. Note: With paths, one must of course, be careful about things like what is meant by differentiability at endpoints, etc. This bothers only the best of students, but some cautionary remarks in the class may be appropriate.

Page 263, Exercise 8, delete both 2’s in the second line.

Page 277, last line, $y\mathbf{k}$ should be $-y\mathbf{k}$.

Page 284, line 3 of the solution to Example 16, the first r (the one in the numerator) should be bold.

Chapter 5

Page 324, line 2, “sample” should be “example”.

Page 341, in the figure, the top right hand square root should not have a minus sign in front of it.

Page 346, the figure is not very clear and will be changed. The region in question is obtained by drawing a vertical shaft above the triangle shown in the xy plane. The region in question is the intersection of the shaft with the solid paraboloid.

Page 350, in Exercise 24, line 4, “over D divided by the area of D ” should read “over W divided by the volume of W ”.

Chapter 6

Page 389, In line 2, the sub n on D should be η and in the first line of the first display, $\delta + \eta$ should be η . One line 4 from the bottom, “so” should be “to”.

Chapter 7

Page 401 In the display in Exercise 6, replace $(t_i^*)^2$ by t_i and delete the inequality on t_i^* at the end.

Page 460, In Exercise 4, replace the first **j** by **i** and at the end, replace y by x .

Page 461, Exercise 11; in the display, replace $\theta = 1$ by $\theta = 0$.

Page 462, Exercise 17, in the display, replace the last y by z .

Page 475, In Theorem 4, the first displayed equation should have a comma in the numerator before the minus sign.

Chapter 8

Page 501, line 4 above Theorem 8, replace “formula 10” by “formula 9”.

Page 509, in the second display, replace S_1 by S_2 .

Page 513, replace the last bold **r** in the first display by r .

Answers

Page 567, Exercise 1(c) replace 4 by 2 and 2 by $\sqrt{2}$.

Page 572, 2.6.5(a), the answer should be $z + 9x - 6y + 6 = 0$.

Page 602, Answer to Exercise 13, in the first display, replace $(25 + z^2)$ by $\sqrt{25 + z^2}$ and in (b), the answer should be $(\sqrt{25 + z^2} \cos \theta, \sqrt{25 + z^2} \sin \theta, -z)/\sqrt{25 + z^2}$.