

Calculus for the Life Sciences  
Ralph Ackerman, James Cornette

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Page 3, Footnote, Debora (not Deborah) is an Associate Professor.

Page 65,  $(y^2 + 3x + 9/4)$  should be  $(y^2 + 3y + 9/4)$ .

Page 86, Second paragraph, “16 minutes intervals” should be “16-minute intervals.”

Page 109, The numerator of the first fraction should be  $(L(b) - L(d))mw/cm^2$ .

Page 123,  $[2t][7]'$  should be  $[2t]' + [7]'$  and  $2[t][7]'$  should be  $2[t]' + [7]'$ , twice.

Page 124, Example 3.5.4 “t seconds after it is released” should be “t seconds after it is hit”

Page, 165, Figure 4.22 The portion of the graph with  $x \leq 25$  should be dashed.

Pages 191 and 192, Units on equations for Primitive Concepts 1 and 2: The  $l$  for liters looks identical to the number 1. Change the  $l$ 's to *liters* in 7 places.

Page 226, Add: In Leibnitz notation,  $\frac{dG(u(t))}{dt} = \frac{dG(u)}{du} \times \frac{du(t)}{dt}$ .

Page 240,  $\pi < z < \pi$  should be  $-\pi < z < \pi$ .

Page 242, Exercise 7.1.4 part (d) “Is the previous step useful?” should be “Is Step (b) useful?”

P 256, earth should be Earth.

P 279, Last line, “it ” should be “if”.

P 286, Sixth ‘dot’ from the top, “Find the critical points.” should be “Find the critical points of  $A^2$ .” Also, “The critical points are” should be “The critical points of  $A^2$  are”.

P 307, Third line from the bottom. “A good approximation” should be “A good initial approximation”.

P 313, Third sentence. “(8.29) is called” should be “Equation (8.29) is called”.

P 344, Line 13 “TI- 86, the” should be “TI-86 calculator, the”.

P 370, Figure 10.5 In the graph it would be good to replace “ $t = x$ ” with “ $f(x)$ ”.

P 391 and 396, In the legends of Figures 11.4 and 11.13, Insert: “Assume the original of each photograph is 30 cm wide.”

P 409, Exercise 11.5.9  $1 \leq x \leq m$  should be  $0 \leq x \leq m$ .

P 445, The axis labels on Figure 13.4 (a) should be the same as in Figure 13.4 (b).

P 453, Figure 13.12.  $mx_k + b$  should be  $bx_k + a$ .

P 474, The indices  $i$  and  $j$  used in the programs are opposite to their use in the text.

P 523, Exercise 15.1.6, replace “infected” with “newly infected on day zero”.

P 525, Replace “Our model follows next.” With “Your predecessors have had, and you probably have, some useful and interesting observations and suggestions. Some of those observations lead to the model I show next.”

P 600, Exercise 17.4.11 after  $u^{-1}$  insert (the inverse of the function  $u$ ).

P 602, Add to the legend of Figure 17.13, “This is Ricker’s model of a fish population. The curve shown as the solution is the Runge-Kutta (Section 17.5.1) approximation to the solution.”

P 604, The MATLAB program solves  $y' = -ty, y(0) = 2$  the solution of which is  $y(t) = 2e^{-t^2/2}$ . The program can be changed to solve the problem discussed in Example 17.5.2,  $y'(t) = t - y, y(0) = 2$  by adjusting the ylabel and changing

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ys=2*exp((-xs.*xs/2));          to      ys = xs - 1 + 3*exp(-xs);          and
v(i+1) = v(i) - t(i)*v(i)*h;    to      v(i+1) = v(i) + (t(i) - v(i))*h;
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P 604, Insert  $y_k$  in the last equation between  $hr$  and  $(1 - \frac{y_k}{M})$ .

P 612, “threshold number below which” should be “threshold number (0.1) below which”

P 613, Example 17.7.1, second line, “ $a = 1$ ” should be “ $a = 0$ ”

P 626, Ex 17.8.1 Table pop ‘tab1’ bev should be Table 17.6

P 626, Ex 17.8.4 Third equation should be  $[\ln(1 - y)]' = -1/(1 - y)$

P 632, Line – 17, Insert the sentence. “We will use the traditional value  $K = (\ln 2)/5568$ .”

P 650, Exercise 18.1.14 “0.3” in the second equation should be “ $\omega$ ”.

p 352 A good Wiggers digram can be found at [https://en.wikipedia.org/wiki/Wiggers\\_diagram](https://en.wikipedia.org/wiki/Wiggers_diagram).

**Semester project** (Modified). Compute the cardiac work of a *Marathon runner*.

P 362, **Semester Project.** The horizontal axis in Figure 9.36 is not linear. The length of the interval [400 500] is less than the length of [600 700]. Others have marked the same graph with a linear scale on [400 700]. See [https://commons.wikimedia.org/wiki/File:Chlorophyll\\_lab\\_spectra2.PNG](https://commons.wikimedia.org/wiki/File:Chlorophyll_lab_spectra2.PNG) Which is correct? Are the energies absorbed by chlorophylls a and b significantly changed? You will need irradiance data from <https://www.nrel.gov/grid/solar-resource/spectra.html>, columns 1 and 4.