Corrections to:

Discrete Dynamical Systems, Chaos Theory and Fractals **(2018)**
by Linda Sundbye

Last Updated: March 15, 2019

1. **Chapter 1**

   a) p. 15, pr. 6a, change window to $[0, 3]$.

   b) p. 15, pr. 6b, change window to $[-5, 5]$.

2. **Chapter 2**

   a) p. 19, Figure 2.2, swap the epsilons and the deltas.

   b) p. 32, Equation 2.27 is missing an equals sign. Should read $A_{n+1} = (1 + 0.01)A_n \ldots$.

   c) p. 33, in part c) on the top half of the page, should read $n = \ln(15/13)/\ln(1.01) = 14.38$ months.

   d) p. 36, pr. 11, change '100 years' to '1 billion years'; change '1000 years' to '2 billion years.'

   e) p. 36, pr. 13, use $A_0 = \$10,000$.

   f) p. 36, pr. 16,17,18, change 'At retirement' to 'If you retire now.'

   g) p. 37, pr. 23, change 'yo udrive' to 'you drive'.

3. **Chapter 3**

   a) p. 47, 2nd line of Theorem 3.10, should read 'the orbit of $\tilde{x}$'; remove 'the.'

   b) p. 62, pr. 1f) and 1g), change $x_0 = 0.001$ and use $niter = 10$.

   c) p. 62, pr. 1i), use $niter = 10$.

   d) p. 62, pr. 5, should read $x_{n+1} = x_n^2 + ax_n + b$.

   e) p. 63, pr. 13, change x_0 to $\tilde{x}$ is both places.

4. **Chapter 4**

   a) p. 71, 2nd paragraph under 'Pitchfork Bifurcation', change 'loaded beam' to 'loaded vertical beam'.

   b) p. 73, Figure 4.20 change $x_0 = -0.2$

   c) p. 73, Figure 4.21 change $x_0 = 0.2$

   d) p. 83, label the Tent Map as T_a in 3 places near bottom of page.

   e) p. 84, bottom line, the orbit of $x_0 = 1/4$ is $\{1/4, 1/2, 1, 0, 0, 0, \ldots\}$. The 1 is missing.

   f) p. 86, Figure 4.36 change $x_0 = 0.4$

   g) p. 86, Figure 4.37 change $x_0 = 0.4001$

5. **Chapter 5**

   a) p. 89, the sequence for the number of baby pairs has $F_0 = 0, F_1 = 1, F_2 = 2$. In Equation 5.1, change to $F_1 = 1, F_2 = 1$.

   b) p. 89, in Equation 5.2, change both exponents to n.

   c) p. 92, in Equation 5.18, change $F_0 = 0$

   d) p. 92, in Equation 5.19, $c_1 = \dfrac{1}{\sqrt{5}}$ and $c_1 = \dfrac{-1}{\sqrt{5}}$.

   e) p. 92, in Equation 5.20, change both exponents to n.

   f) p. 92, bottom 2 formulas: change F_2 to F_3, and change F_3 to F_4. And add: $F_2 = \dfrac{1}{\sqrt{5}}\left[\left(\dfrac{1+\sqrt{5}}{2}\right)^2 - \left(\dfrac{1-\sqrt{5}}{2}\right)^2\right] = 1$

   g) p. 97, pr. 1i), change to $x_{n+2} = -25x_n$.

   h) p. 98, pr. 6, change to $n \geq 1$.

   i) p. 98, pr. 6h, change to $F_{n+6} = 4F_{n+3} + F_n$

   j) p. 98, pr. 7, change to $n \geq 1$.