We would also like to thank James Meiss and Alexander Voronov for sending us suggestions and corrections to the printed text and solutions manuals.

Exercise 1.4.17 (a):
Change $(\pi(j), j)$ to $(j, \pi(j))$.

Exercise 3.3.44:
Move Exercise 3.3.44 to the exercise set in following subsection since matrix norms are not introduced until there.

Equation (3.57):
Change $K = \begin{pmatrix} c^2 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$ to $K = \begin{pmatrix} c^2 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix}$

Exercise 5.5.71 (d):
Change “Answer part (d) . . . ” to “Answer part (c) . . . ”

Exercise 6.1.8 (b):
Change “Answer Exercise 6.1.8 when . . . ” to “Answer part (a) when . . . ”

Exercise 6.1.16:
Change “Describe the mass–spring chains that gives rise to . . . ” to “Describe mass–spring chains that give rise to . . . ”

Exercise 8.4.1:
Change $W \subset \mathbb{R}^2$ to $W \subset \mathbb{R}^3$

Exercise 8.6.26 (c):
Change $\begin{pmatrix} 0 & -1 & 1 \\ 1 & 1 & -1 \\ 3 & 3 & -4 \end{pmatrix}$ to $\begin{pmatrix} 0 & -1 & 1 \\ 1 & 1 & -1 \\ -3 & 3 & -4 \end{pmatrix}$
Exercise 8.6.27:
Insert period after “impractical”

Exercise 8.8.1 (e):
Change , ., , .9, .−.4, −.8, .2, 1, −.1.6, −.1.2, −.7

Exercise 8.8.12:
Change dist(x, L) = \sum_{i=1}^{m} (\text{dist}(x_i, L)) to \sum_{i=1}^{m} (\text{dist}(x_i, L))^2

Exercise 9.6.19 (e):
Change “. . . the solution ot the linear . . .” to “. . . the solution to the linear . . .”

line before Example 9.56:
Change “. . . can be found [18, 88].” to “. . . can be found in [18, 88].”

Exercise 9.7.1 (a):
Change “. . . coefficients c_{j,k}.” to “. . . coefficients c_0 and c_{j,k} for j = 0, . . . , 3 and k = 0, . . . , 2^j − 1.”

Exercise 9.7.22:
Change i ≥ p to i ≥ 3. Also change “Daubechies scaling equation” to “Daubechies dilation equation”.

Replace the final paragraph by the following:

Before explaining how to solve the Daubechies dilation equation, let us complete our discussion of orthogonality. It is easy to see that, by translation invariance of the inner product integral, since ϕ(x) and ϕ(x − m) are orthogonal whenever m ≠ 0, so are ϕ(x − k) and ϕ(x − l) for all k ≠ l. Next we seek to establish orthogonality of ϕ(x − m) and w(x).

Combining the dilation equation (9.138) and the definition (9.142) of w, and then using (9.147, 148), produces

\[
\langle w(x), \varphi(x - m) \rangle = \left\langle \sum_{j=0}^{p} (-1)^j c_{p-j} \varphi(2x - j), \sum_{k=0}^{p} c_k \varphi(2x - 2m - k) \right\rangle
\]

= \sum_{j,k=0}^{p} (-1)^j c_{p-j} c_k \langle \varphi(2x - j), \varphi(2x - 2m - k) \rangle

= \sum_{j,k=0}^{p} (-1)^j c_{p-j} c_k \langle \varphi(x), \varphi(x + j - 2m - k) \rangle = \frac{1}{2} \sum_{k} (-1)^k c_{p-2m-k} c_k \|\varphi\|^2,

where the sum is over all 0 ≤ k ≤ p such that 0 ≤ 2m + k ≤ p. Now, if p = 2q + 1 is odd, then each term in the final summation appears twice, with opposite signs, and hence the result is always zero — no matter what the coefficients c_0, . . . , c_p are! On the other hand, if p = 2q is even, then orthogonality requires all c_0 = · · · = c_p = 0, and hence ϕ(x) ≡ 0 is completely trivial and not of interest. Indeed, the particular cases m = ±q require c_0 = c_p = 0; with this, setting m = ±(q − 1) requires c_1 = c_{p−1} = 0, and so on.
Thus, to ensure orthogonality of the wavelet basis, the dilation equation (9.138) necessarily has an even number of terms, meaning that $p$ must be an odd integer, as it is in the Haar and Daubechies versions (but not for the hat function). The proof of orthogonality of the translates $w(x - m)$ of the mother wavelet, along with all her wavelet descendents $w(2^j x - k)$, relies on a similar argument, and the details are left as Exercise 9.7.17.