## CORRECTIONS TO
# Elementary Numerical Analysis

| Page | Line | Change |
|---|---|---|
| 11 | Line 3 of Thm 1.2.1 | ... denote the remainder or error in ... |
| 20 | Problem 17 | Define $f(x) = \int_0^x e^{-t^2} dt$. |
| 115 | Problem 3 | In the definition of $g(x)$, replace the term $h(x)$ in the denominator with $m\, h(x)$. |
| 289 | formula (6.75) | $\begin{array}{l} \|b_1\| > \|c_1\| > 0 \\ \|b_j\| \geq \|a_j\| + \|c_j\|, \quad a_j, c_j \neq 0, \quad j = 2, 3, \ldots, n-1 \\ \|b_n\| > \|a_n\| > 0 \end{array}$ |
| 305 | Line $k = 4$ of Table 6.2 | Change entry "5.06E−2" to "5.04E−2" |
| 338 | Line 1 of Example 7.2.5 | Change "Figure 7.2.1" to "Figure 7.6" |
| 344 | Line $m = 2$ of Table 7.4 | Change entry "−5.03E+0" to "−5.02E+0" |
| 361 | Line 4 of Section 7.3.3 | Change "(7.54)" to "(7.61)" |
| 375 | Line -7 | $\dfrac{\partial f(x,z)}{\partial z} = -2z$ |
| 375 | Line -6 | $g(t) = -2Y(t) = -\dfrac{2}{t+1}$ |
| 381 | Line -5 | Change "0.001873" to "0.008731" |
| 382 | Line -5 | ... factors of 1.93 and 1.87. The reader ... |
| 385 | Line 2 of Problem 1(e) | $Y(x) = (1 + \frac{1}{2}x^2)e^{-x}$ |
| 385 | Problem 1(g) | $Y'(x) = (3x^2 + 1)\, Y(x)^2, \qquad 0 \leq x \leq 10, \quad Y(0) = -1;$ $Y(x) = -\left[x^3 + x + 1\right]^{-1}$ |
| 388 | Line -18 | ... with the special case preceding ... |
| 391 | Line 5 | Change "0.000818" to "0.000817" |
| 392 | Line $x = 1.0$ of Table 8.3 | Change entry "9.80E−3" to "9.81E−3" |
| 392 | Line 2 of Example 8.3.4 | ... selected values of $x$. Note that ... |
| 395 | Line 1 | Then, subtracting (8.45) from the equation for ... |
| 399 | Line 6 | Change "accurary" to "accuracy" |
| 409 | Table 8.9 | Change the *Euler Error* entry 2.83E−3 to 2.83E−2 |
| 422 | Line 1 of Problem 13 | ... particle of mass $m$ falling vertically ... |
| 425 | Line $x = 6$ of Table 8.17 | Change entry "-0.67500371" to "0.68174279" |
| 429 | Line $x = 10$ of Table 8.20 | Change entry "−1.25E−4" to "−1.275E−4" |
| 429 | Line 3 of Example 8.6.5 | Change "Table 8.17" to "Table 8.20" |
| 429 | Line 5 of Example 8.6.5 | Change "Table 8.17" to "Table 8.20" |
| 432 | Line 2 of Problem 4 | ... the first step $y_1$, use the Euler |
| 439 | Line 9 of Table 8.22 | 6   1.92034   1.59E − 2   7.69E − 3   2.1   8.17E − 3 |
| 439 | Line 11 of Table 8.22 | 10   −1.67814   1.26E − 3   9.44E − 4   1.3   3.11E − 4 |
| 444 | Line 1 | Change "(8.128)" to "(8.129)" |

| Page | Line | Change |
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| 449 | Problem 6 | Change the first four lines as follows:<br>Verify that any function of the form $Y(x) = c_1\sqrt{x} + c_2x^4$ satisfies the equation<br>$$x^2Y''(x) - \tfrac{7}{2}xY'(x) + 2Y(x) = 0$$<br>Determine the solution of the equation with the boundary conditions<br>$$Y(1) = 1, \qquad Y(4) = 2$$ |
| 454 | Line 4 | $\dfrac{\partial^2 u}{\partial y^2}(x_i, y_j) = \dfrac{u(x_i, y_{j+1}) - 2\,u(x_i, y_j) + u(x_i, y_{j-1})}{h_y^2} + O(h_y^2)$ |
| 457 | Line -10 | `n1 = n+1; h = 1/n;` |
| 457 | Line -9 | `toln = (h^2)*tol;` |
| 458 | Line 6 | `while ((rel_err>toln) & (itnum<=max_it))` |
| 464 | Line 1 of Problem 3 | Change $x^3$ to $x^4$ |
| 464 | Line 3 of Problem 3 | $\dfrac{\partial^2 u}{\partial x^2} + \dfrac{\partial^2 u}{\partial y^2} = 2x\left(x^3 - 6xy + 6xy^2 - 1\right), \quad 0 < x, y < 1$ |
| 464 | Line -6 | $\cdots\ 0 < x < 1$ |
| 464 | Line -5 | $\cdots\ 0 < y < 1$ |
| 468 | Line 2 of Section 9.2.2 | ... we need to choose a stepsize ... |
| 476 | Midpage | Change $\gamma g_2(t_{n_x+1})$ to $\gamma g_2(t_k)$ |
| 493 | Line -1 | Change "0.3777" to "0.3778" |
| 495 | Line -3 | $(a, b)$ and let $f(x)$ be continuous on $[a, b]$. Then ... |
| 506 | Top graph | Interchange the labels for $\sin^{-1}(x)$ and $\cos^{-1}(x)$ on the graph |
| 511 | Line -3 | ... In addition, one can use ... |
| 529 | Line 10 of Example E.4 | $2x_6 = 1.0 \qquad x_7 = 0 \qquad a_6 = 1$ |
| 544 | Line 8 (in problem 7) | $MD(A \to U) = \frac{1}{2}n\,(n+1) - 1$ |
| 546 | Line $x = 2$ of table in 2(c) | Change "2.23E$-$2" to "2.23E$-$1" |
| 546 | Line -2 | Use $K = 2 \max\limits_{0 \le x \le b} \lvert 4Y(x) \rvert = 4, \quad \text{for } b \ge 1.$ |
| 548 | Line $x = 6$ of first table | Change "2.70E$-$5" to "2.55E$-$5" |
| 549 | Problem 2(a) | Append at the second line:<br>$y_1$ and $y_2$ obtained using the RK method of order 2 with $\gamma_2 = 1$. |