Corrections and emendations for
Elementary Numerical Analysis, 3rd ed.
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Each item in this list of corrections and emendations is in the form

a/b/c: A `-->` B [C]

to indicate that, at the location specified, A should be replaced by B, with C an optional comment.

The location specification *a/b/c* means **page** *a*, **paragraph** or **item** *b*, and **line** *c* , with a positive(negative) *b* or *c* meaning a count from the top(bottom) of the page or the specified paragraph.

For example, both 5/5/1 and 5/-1/-3 refer to the same line, the one on page 5 that begins "This example was rigged..."

Either A or B can be empty, and [C] rarely occurs. An A of the form A1...A2 indicates the entire text starting with A1 and ending with A2, with ... , if used in B, standing for the entire text between A1 and A2.

v/Chapter 2/1: Polynomial `-->` Polynomials

33//-1: auxilliary `-->` auxiliary

36/4/4: **of** `-->` of

38/2/-2: at most `-->` **at most**

38/3/1: at least `-->` **at least**

41/2/2: $(x - x_1)$ `-->` $(x - x_0)$

41/2/3: $+$ `-->` $+(x - x_0)$

43/Figure 2.1/heading: x_1 `-->` x_i

45//-1: 20 `-->` 19

50/2.4-2/4: $p_{i+1,j-1}$ `-->` $p_{i+1,j}$

54/Figure 2.3 legend/2: dotted `-->` dashed

66//5,6: find then `-->` then find

66/1/-2,-1: some ... which `-->` any limit point ξ of the sequence $\xi^{(1)}, \xi^{(2)}, \ldots$, by the continuity of $f(n)(x)$ and any such ξ must lie in $[\lim_r x_0^{(r)}, \lim_r x_n^{(r)}] = [y_0, y_n]$. This

70/flowchart/second-last box: $),]$ `-->` $)]$

82//line after label 6: `)  RETURN` `-->` `) THEN | IFLAG = 0 | RETURN | END IF`

87/Example 3.2b/2: solution ... form `-->` smallest positive zero of

87/table/: [replace the content of the table by

.45000000	1.3279984E+01	.60000000	-1.1262310E+01
.43989500	2.3542378E+00	.66877546	1.2870500E+01
.43721231	1.2177630E-01	.64882229	2.2544956E+00
.43705785	3.7494997E-04	.64361698	1.1312314E-01
.43705737	3.5831818E-09	.64332721	3.2632512E-04
		.64332637	2.7358738E-09

]

105/3/-5: . `-->` and x by $a + b - x$ (i.e., a rotation of the x, y-plane of 180 degrees around the point $((a + b)/2, 0)$ which leaves the sign of f' unchanged but changes the sign of f'').

110//-6,-5: number of **variations** v `-->` number v of **variations**

156/4.2-8/-1: `-->` (Answers depend crucially on just how rounding is carried out and how substitution is handled, as in `SUBST` or as in Algorithm 4.2. One can get anything, from the correct solution to a singular system.)

159//4: with --> with symmetric

162/4/2: **p** --> p

164/-1/4: **A**, storing the factorization --> A, stored on entry

164/-1/4,5: , and storing --> . The program stores the factorization of A in the same workarray **W**, and stores

164//-5: **A** --> A

164//-4 to -1: [delete]

169/4.4-9/5: ℓ_{i1} --> $\ell_{i1}d_{11}$

169/4.4-9/5: $\ell_{i,j-1}$ --> $\ell_{i,j-1}d_{j-1,j-1}$

169/4.4-9/7: ℓ_{j1}^2 --> $\ell_{j1}^2 d_{11}$

169/4.4-9/7: $\ell_{j,j-1}^2$ --> $\ell_{j,j-1}^2 d_{j-1,j-1}$

172/2/4: $p,\ w$ --> p, w

179/Theorem/4: u --> nu

180//-2: u --> ru

181/-2/-4: 50 --> 50a

192/Table/: [the last entry of $B^m z$ and of $z^{(m)}$ for all odd m should be multiplied by -1]

192/2/7: [move the first λ_1 from the numerator to the front of the fraction]

194/Program/second line after `10`: `O` --> `0`

205/1/-5: 11 --> 8

205/2/2,3: p_{i-1} --> p_i [three times]

206/4.8-15/1 matrix --> matrix, i.e., a matrix A satisfying $A = A^H$,

212/-1/2: 2 --> 3

214//2: $s_2 := t_{\max}$ --> $(s_1, s_2, s_3) := (s_2, s_3, t_{\max})$

214/2/6: allright --> alright

215/5.1-1/2: +3 --> $-3(2x_1 + x_2)$

216//-14: $\mathbf{f}'$ --> $\mathbf{f}'(\mathbf{x})$

218//-3: choice --> choices

219/Algorithm/7: $*i$ --> $*\ \ i$

221/3/-6: from **f** --> from $\mathbf{f}'$

231/3/3: positive ... and --> real symmetric and positive definite, i.e.,

231/4/5,7: $>$ --> $\geq$

231/4/11: $= (\widehat{D}$ --> $= ((1-\omega)\widehat{D}$

236/2/-3,-2: will not ... constructing --> would be wasting time and effort if we were to construct

237/Example 6.2/1 $\pi/4$ --> $(\pi/4)$

237/Example 6.2/-2: 403 --> 4065

242/2/4:] --> $, x]$

242//-3: $\prod_{j=0}^{n+1}$ --> $\prod_{j=0}^{n}$

244/(6.19)/: $\geq e^{n/2}$ --> $= \frac{2^{n+1}}{en \ln n}(1 + o(1))$

244/3/-1: . --> ; also, see Problem 6.1-15.

245//: --> **6.1-15** (R.-Q. Jia) Prove that $\|\Lambda_n^u\| \geq 2^n/[4n(n-1)]$ by estimating $\Lambda_n^u(1 - 1/n)$ from below.

253/Property 3/-1: . --> and some $\alpha_k \neq 0$.

271/-1/4: continuous `-->` monotone [also at 274/4/-1, 276/3/-1]

272//5: $+2\} = i$ `-->` $-2\} = -i$

272/(6.51)/: $-ix_n$ `-->` $-ix_nj$

274/2/3: 20 `-->` 24

275/Example 6.14/2: the relevant quantities are: `-->` $c_r = \widehat{f}_N(r) = \langle \mathbf{f}, \mathbf{w}^{(r)} \rangle$ with $\mathbf{f} := (f(x_j)), \mathbf{w}^{(r)} := (\mathrm{e}^{imx_j}) = (\omega^{mj})$ and

275/Example 6.14/4: These are ... Further `-->` Thus $\omega^2 = \omega^{-1} = \overline{\omega}$. Further

275/Example 6.14/-4: Now ... have `-->` Therefore,

275/Example 6.14/-2: $-\sqrt{3.4}\omega^{-2}] = \frac{1}{3}3/4$ `-->` $-\sqrt{3/4}\omega^{-2}] = \frac{1}{3}\sqrt{3/4}$

289//-5: 79 `-->` 81

291/Program/: `-->` `C(2,1) = 0`

291/Program/: `-->` `C(2,N+1) = 0`

299//2: gets `-->` gets from Exercise 2.7-8 that

307//4: $x + b$ `-->` $x - b$

311/1/-2: $-$ `-->` $+$

311/-2/-5: nonnegative `-->` *nonnegative*

312//6: $=$ `-->` $= -$

313//-8,-4: 6.6 `-->` 6.3

313//-5: 3 `-->` 2

313//-4: 2 `-->` 3

318//1: 8 `-->` 5

321/(7.50)/: $f_i =$ `-->` $f_i +$

325/program/statement 4: [delete it]

326/(7.54b)/: 1 `-->` $b - a$

341/-2/-4: h_k^{2k} `-->` h^{2k}

345/7.7-4/3: h^2 `-->` h^3 [twice]

345//-1: `-->`)

352//5: a_{n-1} `-->` a_{N-1}

352//6: β^n `-->` β^N

356//3: 8.23 `-->` * [also on 356/2/3]

364/3/2: $=$ `-->` $= -$

365/3/-2: NSTEP `-->` NSTEPS

367/(8.38)/: $\mathcal{O}(h^{p+1})$ `-->` $C_n h^{p+1} + \mathcal{O}(h^{p+2})$ [also at 367/(8.39a)/]

367/(8.38)/+3: $C(x_n + mh)$ `-->` C_n

367/(8.38)/+4: point `-->` number

367/(8.38)/+5: $x = x_n + mh$ `-->` m

367/(8.39b)/: $\mathcal{O}(h^{p+1})$ `-->` $2C_n h^{p+1} + \mathcal{O}(h^{p+2})$

367/(8.39b)/+3: $C_n(\frac{h}{2})^p$ `-->` $2C_n(\frac{h}{2})^{p+1}$

371/2/2: outputted `-->` output

374/1/6: 8.43 `-->` 8.44

381//5,6: and since ... assumption, `-->`

381//9: [delete]

382/8.8-1/-1: $|Ah/2| < 1$ `-->` $Ah/2 \neq 1$

382//-7: 10 --> 19

389/1/9: 6 --> 3

393//2: β^2...1 --> (β^2...1)/(-3)

394/display: $-\frac{1}{2}f_n + \frac{1}{2}f_{n-1}$ --> $+f_n$

418/(9.21)/: c_2x^3 --> c_3x^3

419/9.4-1/: 4 --> 3

419/9.3-1/-1: $=$ --> $= 2$

419/9.4-2/: [delete it; it's silly]

423/14./: McCracken ... 1964 --> Dorn, W. S., and D. McCracken, *Numerical Methods with Fortran IV Case Studies*, John Wiley, New York, 1972.

430//: Lebesque --> Lebesgue

430//: --> Matrix: Hermitian, 206

430//: --> Matrix: Hermitian of a, 142

431//: --> Polynomial forms: Chebyshev, 258

431//: --> Polynomial forms: orthogonal, 253ff