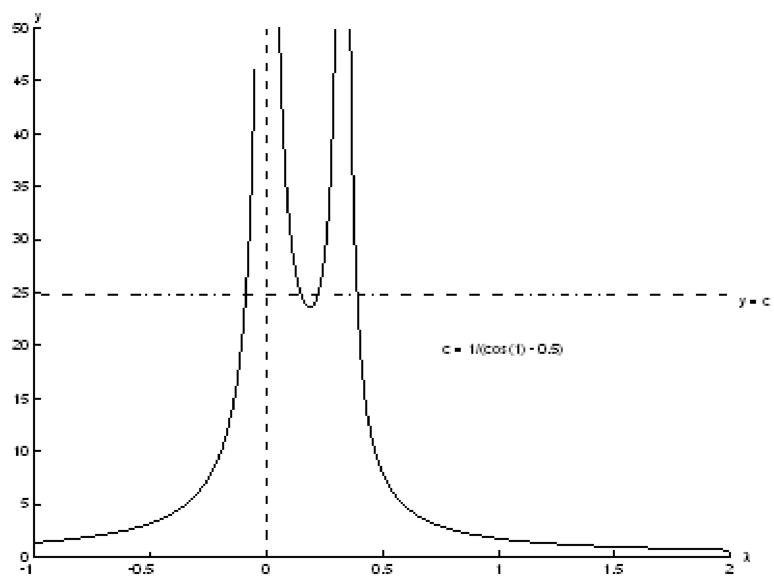
CORRECTIONS TO
Theoretical Numerical Analysis

Page	Line	Change
10	-12	Change "bounded functions" to "continuous functions"
11	4	Change "bounded functions" to "continuous functions"
15	6	Change $\|v\|_{p,\infty}$ to $\|v\|_{\infty,w}$
23	-9	angle between two vectors u and v in a real space V as follows:
46	Exercise 2.2.5	Rewrite it as follows:

Exercise 2.2.5 Let a linear operator $L : V \to W$ be nonsingular and map V onto W. Show that for each $f \in W$, the equation $Lu = f$ has a unique solution $u \in V$.

Page	Line	Change
50	-3	Change "$\leq$" to "$<$"
53	6	Change to "$v(x) = \dfrac{1}{\lambda}\,[f(x) + cx]$"
54	Figure 2.1	The graph is incorrect; following is the correct graph



Page	Line	Change
62	Exercise 2.4.4	Append the following to the exercise.

More precisely, show that

$$\sup_{v,\widetilde{v}} \left[\frac{\|v - \widetilde{v}\|}{\|v\|} \div \frac{\|w - \widetilde{w}\|}{\|w\|} \right] = \|L\| \left\|L^{-1}\right\|$$

Page	Line	Change
71	Exercise 2.6.2	Change the exercise to the following:

Exercise 2.6.2 Define $K : L^2(0,1) \to L^2(0,1)$ by

$$Kf(x) = \int_0^x k(x,y)f(y)dy, \quad 0 \le x \le 1, \quad f \in L^2(0,1),$$

with $k(x,y)$ continuous for $0 \le y \le x \le 1$. Show K is a bounded operator. What is K^*? To what extent can the assumption of continuity of $k(x,y)$ be made less restrictive?

Page	Line	Change
104	9	$\lvert L_n v - Lv \rvert \le ch^2 \lVert v'' \rVert_{L^1(a,b)}$
117	3	$f(x) = \frac{a_0}{2} + \sum_{j=1}^{\infty} [a_j \cos(jx) + b_j \sin(jx)]$
124	Exercise 3.5.2	Change "$P\varphi_j = 0$" to "$(x, \varphi_j) = 0$"
126	14	Change "$n \ge 1$" to "$n > k$"
127	9	change "and if $x \notin$" to "and if $\theta \notin$"
127	10	$D_n(\theta) = \dfrac{\sin\left(n + \frac{1}{2}\right)\theta}{\sin \frac{1}{2}\theta}$
134	Exercise 4.1.2	Include the assumption that T is continuous
134	Exercise 4.1.2	Change "coverges" to "converges"
145	Exercise 4.2.8, line 4	where g is continuous, $h \in L^1(a,b)$, and $h(t) \ge 0$ a.e. Show that
150	1	"Assume U and V are real Banach spaces. Let $F : K \subseteq$"
153	-1	$f(x_1,x_2) = \begin{cases} \dfrac{x_1 x_2^3}{x_1^2 + x_2^6}, & \text{if } (x_1 x_2) \ne (0,0), \\ 0, & \text{if } (x_1 x_2) = (0,0). \end{cases}$
154	Exercise 4.3.7	Change "$p \ge 2$" to "$p \ge 1$"
154	Exercise 4.3.9	Let $A \in \mathcal{L}(V)$ be self-adjoint, V being a real Hilbert space. Define
201	8	Change "Lebegue" to "Lebesgue"
209	-1	Change $\frac{p}{d}$ to $\frac{d}{p}$
210	3	Change $\frac{p}{d}$ to $\frac{d}{p}$
211	-13	Change "Beore" to "Before"
212	5	Change "$\lVert u \rVert_{k,p,\Omega}$" to "$\lVert v \rVert_{k,p,\Omega}$"
353	Table 11.1	The first two entries for n should be 2 and 4
397	13	"Since the collocation solution satisfies $u_n = P_n \widehat{u}_n$, ..."