Errata

Page	Line	
6	t11	(ix) right side should be $a \cdot b + a \cdot c$.
7		Proof of Theorem 1.2 (i) $a > b$ and $b > c$ means $a - b \in P$ (ii) $a > b$ and $c \geq d$ means $a - b \in P$ (iii) $a > b$ and $c > 0$ means $a - b \in P$
10	b15	Theorem 1.6 should be Theorem 1.3
13	b14	If $B \subset A$, and B is nonempty,
19	t6	for $0 < \lvert x \rvert \leq 1$.
21	t3	$\frac{2n^3+3n^2+n+6(n+1)^2}{6}$
21	t4	$\frac{2(n+1)^3+3(n+1)^2+n+1}{6}$
22	b12	$m(m+1)/2$.
59	t7 t9	$0 \leq \sin x \leq x$ for $0 \leq x \leq \pi$ $-x \leq \sin x \leq 0$ for $-\pi \leq x \leq 0$.
72	b12	$\lvert f(x) - f(y) \rvert < \varepsilon$ for all $x, y \in A$ such that $\lvert x - y \rvert < \delta$.
105	b7, b9	$f(x) = x/(1 + \lvert x \rvert), \quad f' = 1/(1 + \lvert x \rvert)^2$.
161	b4	f should be x_*.
165	b1	$f(x_n) + f'(x_n)(x_* - x_n) + R(x_*, x_n)$
178	b1	$\overline{\int_a^b} f = b - a$.
179	t15 t17	Let $a = x_0 < x_1 < \cdots < x_n = b$ subinterval (x_{i-1}, x_i)
181	b3	The explanation for inequality 7.4 is not correct. It should read: For each $i \in J$, there is an index j such that $[y_{i-1}, y_i] \subset [x_{j-1}, x_j]$.

This implies $M_i \leq \sup_{[x_{j-1},x_j]} f, \quad m_i \geq \inf_{[x_{j-1},x_j]} f$. Hence

285 t11 collection of open set U_k

305 b11 $\langle \nabla f(\mathbf{z}), \mathbf{x} - \mathbf{y} \rangle$.

329 b8 Theorem 4.5 should be Theorem 11.4

333 b5 $\mathbf{f}(\mathbf{x} + \mathbf{h}) = \mathbf{Df}(\mathbf{x})\mathbf{h} + \mathbf{R}(\mathbf{h})$.

337 t3 $\leq \delta + \|\mathbf{x}_1 - \mathbf{x}_0\| = \ldots$

354 t3 delete "which implies " and replace with the following:
If $\mathbf{f}(\mathbf{x}) = \mathbf{f}(\mathbf{y})$, then we must have $\mathbf{x} = \mathbf{y}$. For $\mathbf{x} \neq \mathbf{y}$,
we can divide by $\|\mathbf{x} - \mathbf{y}\|$ and deduce that

371 b3 $\mathbf{r}(0) = \mathbf{a}$.

376 t10 $2p_y v_1 v_2 \leq s_1(v_1^2(x+1)^2 + y^2 v_2^2) + s_2(v_1^2(x-1)^2 + y^2 v_2^2)$
$= [s_1(x+1)^2 + s_2(x-1)^2]v_1^2 + [s_1 + s_2]y^2 v_2^2$
Then (11.37) and (11.39) imply that
$\langle \mathbf{Df}(x,y)\mathbf{v}, \mathbf{v} \rangle \geq [p_x - s_1(x+1)^2 - s_2(x-1)^2]v_1^2 + [q_y - (s_1+s_2)y^2]v_2^2$
$\geq (r_1 + r_2)(v_1^2 + v_2^2)$.

377 b8 However, by (11.37), (11.38) and (11.40)

380 t16 b) From (11.41)

411 t5 $-\nabla f(\mathbf{x})$ points into the interior of K.

411 b12 Because the indices are j may not be consecutive, we may not have
$f(x_{j+1}) = f(x_j - t_j \nabla(x_j))$, but we do have $f(x_{j+1}) \leq f(x_j - t_j \nabla(x_j))$.

427 b8 $\mathbf{c} = (c_1, \ldots, c_n)$.

447 t14 The Jacobian matrix should be
$\mathbf{D}\phi(\hat{\mathbf{a}}) = [\mathbf{I}, \mathbf{Dp}(\hat{\mathbf{a}})^T]^T$

452 t1 Let $f(x,y,z) = x + y + z$,

533	b2	$S = \{(u, v) : a \le u \le b,\ 0 \le v \le 1\}$.
609	b 12	$Q_2(x) = 8(1 - \sqrt{2})(x/\pi)^2 + (4\sqrt{2} - 2)(x/\pi)$.
622	b 8	The max of $f\|S$ occurs at $\mathbf{a} = (2/\sqrt{5}, 1/\sqrt{5}, -2/\sqrt{5})$ with $\lambda = \sqrt{5}/2$ and $\mu = -1$. The min occurs at $-\mathbf{a}$ with $\lambda = -\sqrt{5}/2$ and $\mu = -1$.
626	t8	1. There is a sequence $\mathbf{y}_k \in \mathbf{g}(D)$ with $\mathbf{y}_k$ converging to $\mathbf{y}_0$. Let $\mathbf{x}_k = \mathbf{g}^{-1}(\mathbf{y}_k)$.