Errata Sheet: ***Mathematical Methods and Physical Insights*****/Schramm**

Page	Line	Correction
77	below Eqn (7.28)	Replace "$\epsilon = 1$" with "$\epsilon = 0$"
95	Eqn (8.80)	• Delete ", $s \in$ Integers" • Replace "Thus $\Gamma(s) = (s-1)!$." with "Thus for integer s, $\Gamma(s) = (s-1)!$."
521	Prob 32.23	in Eqn (32.67), $\frac{m}{1-x^2}$ with $\frac{m^2}{1-x^2}$
591	Eqn (36.97)	Replace $\frac{1}{\sqrt{2\pi}}$ with $\sqrt{\frac{2}{\pi}} \cdot \frac{1}{\sqrt{2\pi}}$
598	Prob 36.9	Replace "Find the..." with "Find expressions for the..."
598	Prob 36.11	part a: Replace $\mathcal{F}$ with $\mathcal{F}^{-1}$
599	Prob 36.16	Replace "and it Fourier transform..." with "and its Fourier transform..."
600	Prob 36.17	Replace $f(x) = e^{-bx}$ with $f(x) = e^{-b\|x\|}$
600	Prob 36.19	Replace $\mathbb{1}$ with 1
600	Prob 36.28	In last line, replace $\|\tilde{f}(k)\|^2$ with $\sqrt{2\pi}\|\tilde{f}(k)\|^2$
601	Prob 36.34	part b: Replace $\tilde{f}(0)$ with $\tilde{f}(k)$
602	Prob 36.42	Delete "in Table 36.4"
603	Prob 36.48a	Replace "$\lim_{s\to 0} F(s) = 0$" with "$\lim_{s\to\infty} F(s) = 0$"
629	above Eqn (39.41)	Replace "$W(t) =$ " with "$W(t) \sim$ "
629	Eqn (39.42)	Replace "$u_p(t) =$ " with "$u_p(t) \sim$ "
642	Prob 39.18	Replace "$u(0) = 1, u'(0) = 1$" with "$u(1) = 0, u'(1) = 0$"
642-3	Prob 39.19	• Replace $\varphi + \theta = \pi$ with $\theta - \varphi = \pi$ • part b: Replace "With or a ..." with "With a ..." • delete "[Hint: compare the equations of motion in φ and θ.]"
643	Prob 39.20	• 2nd paragraph: Replace "Notice that if the ..." with "If the..." • part b: Replace "...plots of the solution from ..." with "...plots of the solution for ..."

657	Prob 40.5	• parts b and c: Replace $\mathcal{D}^2$ with $-\mathcal{D}^2$ • part c: Delete ", both in integral form and with bra-ket notation, "
682	Eqn (41.117)	Replace $\frac{dT}{dt}\big\|_{r=R}$ with $\frac{\partial T}{\partial n}\big\|_{r=R}$
684	Eqn (41.127)	Replace ψ_m with ψ_{jm}
689	Prob 41.9	Replace "Affixing a mass m..." with "Affixing a very large mass m..."
690	Prob 41.15	In last line, replace "of $V(x, y_0, z)$ for different values of y_0" with "of $V(x, y, z)$ for different values of z"
690	Prob 41.17	Replace $T(x, 0) = x$ with $T(x, 0) = T_0 x/L$
690	Prob 41.18	Replace $\cos^2\theta$ with $T_0 \cos^2\theta$
690	Prob 41.20a	Replace $u'(0) = a$ with $u(0) = a$
690	Prob 41.23	Replace $T(a, y, t) = T_a(y) = y$ with $T(a, y, t) = T_* = T_0 y/b$
690	Prob 41.24	Replace $T(a, y, t) = y$ with $T(a, y, t) = T_0 y/b$ and $T(x, 0, t) = x^2$ with $T(x, 0, t) = T_0 x^2/a^2$
691	Prob 41.25	• replace "... determined by the zeros of ..." with "...determined by the zeros α_{jn} of ..." • replace "Which modes are excited..." with " Which modes (n, j) are excited...." • in parts a, b, c: and n's in parenthese should be replaced with j — e.g., replace $(0, n)$ with $(0, j)$
691	Prob 41.27	replace " the condition on Φ..." with "the periodicity of Φ..."
692	Prob 41.29	delete part c
699	Eqn (42.31)	the second occurrence of $0 < r < r'$ should be $0 < r' < r$
717	Prob 42.10c	replace (42.55) with (42.57)
718	Prob 42.16	part b: replace "...a driving force $f(x, t) = \sin x \cos 2t$." with "...a driving force $f(x, t) = \sin x \cos 2ct$ for $L = \pi$."
718	Prob 42.17	replace "on BTW 42.1" with "of BTW 42.1"
719	Prob 42.23	"Mathematica's" not "Mathematic's"
719	Prob 42.25	replace "Use (2.28) to find G ..." with "Use images and the fundamental solution to find G..."

719	Prob 42.26	• replace "Find" with "Use the fundamental solution to find" • delete "$T(x,0) = T_0(x)$" • replace both a and b with 0
719	Prob 42.27	replace all τ's with t's
719	Prob 42.30	replace $x + c$ with $x/L + c$
719	Prob 42.32	replace $\alpha = 1$ with $\alpha = .01$; before $T(0,t) = \cos t$ insert the condition $T_0(x) = e^x$
719-20	Prob 42.33c	replace $\frac{1}{4\pi^2}$ with $-\frac{1}{4\pi^2}$
727	Eqn (43.35)	the exponentials should be added, not subtracted
727	Eqn (43.36)	• in the first line: exponentials should be added, not subtracted; • in the second line: replace $(-1)^{\ell+1}$ with $(-1)^{\ell}$
727	Prob 43.2	Replace with "... Lippmann-Schwinger equation emerges for a limited-range potential."
728	Prob 43.3	Replace $(\nabla^2 + \mu^2)G(\vec{r}) = -\delta(\vec{r} - \vec{r}')$ with $(\nabla^2 - \mu^2)G(\vec{r}) = -4\pi\delta(\vec{r})$
728	Prob 43.6a	the right-hand side of the equation should have an overall factor of $i^\ell e^{i\delta_\ell}$
728	Prob 43.6b	Replace "the the" with "the"
748	Table C.2	expression in top right corner: replace $J_{n+1}(x)$ with $J_{n\pm1}(x)$
751	Eqn (C.27)	replace $\sin(\nu x)$ with $\sin(\nu\pi)$
754	Prob C.4	append to end of sentence "... in (C.2) for $n \geq 0$."
755	Prob C.11	replace the expression for $\phi_n(x)$ with "$\phi_n(x) = \sin(\alpha_{mn} n x/a)$, where α_{mn} is the mth zero of ϕ_n."
755	Prob C.13	replace "Laplacian" with "Helmholtz equation $(\nabla^2 + k^2)\phi = 0$."
755	Prob C.16	the small-x Neumann function n_ℓ should have $(2\ell)!$ in the numerator, not (2^ℓ)