COMPLEX ANALYSIS

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CHAPTER I

p.8, l.15: Change “ imiginary ” to “ imaginary ” (spelling).

p.8, l.18: Change “ n**th** ” to “ ***n*th** ” (boldface italic en).

p.10, Ex.6(b): Change “ $= 0,$ ” to “ $= 0$ if $n \geq 2,$ ” (insert “ if $n \geq 2$ ” after the zero).

p.18, l.8: Change second subscript from “ 1 ” to “ 2 ” (should be “ $f_1(w)$ and $f_2(w)$ ”).

p.24, l.-1: Change “ $i \log(-i)$ ” to “ $-i \log i$ ” (should be “ $e^{-i \log i}$ ”).

p.32, Ex.5, l.-1 and l.-2: Change “ horizontal strip $\{-\pi < \operatorname{Im} w < \pi\}$ ” to “ vertical strip $\{|\operatorname{Re} w| < \pi/2\}$ ”

CHAPTER II

p.40, Ex.6(a): Exercise 6(a) should read:

$$\text{The sequence } \binom{\alpha}{n} \text{ is bounded if and only if } \operatorname{Re}\alpha \ \geq \ -1.$$

p.49, l.12: Change “ e^z ” to “ e^{az} ” (insert an “a” in the exponent)

p.54, Ex.9, l.3: Change “ $\leq$ ” to “ $<$ ”

p.61, Ex.2, l.2: Change “ one of the figures in this section ” to “ a figure in Section I.6 ”

CHAPTER III

p.96, Ex.2: In the displayed equation, change “ $\beta\mathbf{u}_\theta$ ” to

$$\frac{\beta}{r}\,\mathbf{u}_\theta$$

p.97, Ex.4, l.-3: Change “ are circles ” to “ are arcs of circles ”

p.97, Ex.8: Change the displayed equation to read:

$$\mathbf{V}(r,\theta) \ = \ \frac{1}{r}(-\mathbf{u}_r \ + \ \mathbf{u}_\theta).$$

p.101, Ex.6, l.-1: Change “ the preceding exercise and an appropriate conformal map ” to “ Exercise 5 and the conformal map from Exercise 4 ”

CHAPTER IV

p.106, Ex.5, l.2: Change " 3 " to " 1 "

p.113, l.-6: Change " $f(z)$ " to " $f(w)$ "

p.116, l.6: Change " $|z| = 5$ " to " $|z| = 2$ "

p.117, Ex.1(h): Change " 3 " to " 2 " (should be " $|z - 1| = 2$ ")

p.120, l.5: Delete " as indicated in the figure "

p.122, Ex.2, l.5: Change " $x + \ +iy$ " to " $x + iy$ " (delete a plus sign)

p.123, Ex.4, l.1: Change " and let " to " let " (delete " and ")

p.128, Ex.3: Change " J_f " to " $\det J_f$ " (add " det " in roman font)

CHAPTER V

p.133, Ex.4, l.2: Change " $(-1)^k$ " to " $(-1)^{k+1}$ " (change "k" to "k+1" in the exponent)

p.133, Ex.4, l.4: Change " $S_1 < S_3 < S_5 < \cdots$ and $S_2 > S_4 > S_6 > \cdots$ " to " $S_2 < S_4 < S_6 < \cdots < S_5 < S_3 < S_1$ "

p.136, l.-1: Change " $k + 1$ " to " $m + 1$ " (denominator should be $(s - r)^{m+1}$)

p.137, l.2: Change " $k + 1$ " to " $m + 1$ " (denominator should be $(s - r)^{m+1}$)

p.138, Ex.11, l.3: Change " $z \in D$ " to " $z \in E$ " (change the first cap dee in the line to cap ee)

p.143, Ex.1(b): Change " 6 " to " 6^k " (raise " 6 " to the kth power)

p.154, Ex.4, l.4: Change " five " to " three "

p.156, l.-12: Change " $f(z)$ has distance " to " z_0 has distance " (change the second "$f(z)$" in the line to "z_0")

p.163, Ex.6, l.-1: Change " $1 \leq \operatorname{Re} z < 1 + \varepsilon$ " to " $|z - 1| < \varepsilon$ "

CHAPTER VI

p.170, Ex.3, l.-3: In the displayed formula, change " $i(n\theta - z\sin\theta)$ " to " $i(z\sin\theta - n\theta)$ " (change the sign of the exponent). The formula is correct as it stands, but it led to confusion.

p.171, Ex.7, l.-1: Add " (See Exercise III.3.4.) " at the end.

p.174, l.8: Change the displayed equation to read:

$$f_1(z) \;=\; \frac{1}{z} \;-\; \frac{1}{z+\pi} \;-\; \frac{1}{z-\pi},$$

(This amounts to changing the sign of the expression for $f_1(z)$.)

p.174, l.13: Delete " the first two "

p.174, l.14: Change the displayed equation to read:

$$f_1(z) \;=\; \frac{1}{z} \;-\; \frac{2z}{z^2-\pi^2} \;=\; \frac{1}{z} \;-\; \frac{2}{z}\sum_{k=0}^{\infty}\frac{\pi^{2k}}{z^{2k}} \;=\; -\,\frac{1}{z} \;-\; \sum_{k=1}^{\infty}\frac{2\pi^{2k}}{z^{2k+1}}.$$

(This amounts to changing the sign of the expression for $f_1(z)$.)

p.174, l.15: Change " $a_{-1} = 1$ and $a_{-3} = 2\pi^2$ " to " $a_{-1} = -1$ and $a_{-3} = -2\pi^2$ " (insert two minus signs)

p.178, Ex.15, l.3: Change " $|z|$ " to " z " (delete vertical bars)

CHAPTER VII

p.202, Ex.8: Change the displayed equation to read:

$$\int_{-\infty}^{\infty} \frac{\cos x}{(1+x^2)^2}\,dx \;=\; \frac{\pi}{e}.$$

(Replace the right-hand side by pi over e.)

p.205, Ex.5: The fraction in the integral should read:

$$\frac{1-r^2}{1-2r\cos\theta+r^2}$$

(change " 1 " to " $1-r^2$ " in the numerator of the fraction)

p.206: In the displayed figure, change " Γ_ε " to " γ_ε " (change cap gamma to lower case gamma)

p.210: In the displayed figure, change " Γ_ε " to " γ_δ " (change cap gamma sub epsilon to lower case gamma sub delta)

p.216, l.-10: Change " $R\sin\theta$ " to " $-R\sin\theta$ " (insert minus sign in the exponent)

p.216, l.-1: Change " $1/R$ " to " R " (delete " 1/ " in the upper limit of the integral)

CHAPTER VIII

p.225, l.-9: After " γ in D " insert "providing there are no zeros or poles on the path"

p.231, l.-5: Change " integral " to " expression "

p.231, l.-4: Change " integral " to " expression "

p.234, l.2: Delete " $= N_0$ " (identity should be " $N(w_0) = 1$ ")

p.237, l.-6: Change " af " to " of " (spelling)

p.240, Ex.14(b): Change part (b) of the exercise to read:
(b) Glue together branch cuts to form an m-sheeted (possibly disconnected) surface over the punctured disk $\{0 < |w| < \delta\}$ on which the branches $z_j(w)$ determine a continuous function.

p.241, Ex.15(b), l.2: Change " $AP_1 + BP_2$ " to " $AP_0 + BP_1$ " (change subscripts)

p.242, Ex.15(e), l.2: Change " then the coefficients of each of the irreducible factors of $P(z, w)$ " to " then the irreducible factors of $P(z, w)$ can be chosen so that their coefficients "

p.242, Ex.15(g), l.1: Change " 14(a)-(d) " to " 14(a)-(c) " (change " d " to " c ")

p.242, l.14: Change " Thus " to " If γ is piecewise smooth, "

p.242, l.-5: Delete " , the integrals in (6.1) are zero, and " (should read " Consequently $W(\gamma, z_0) = 0.$ ")

p.244, l.5: Change the displayed equation so that the right-hand side reads

$$= -\int_{\partial U} W(\gamma, \zeta) f(\zeta)\, d\zeta.$$

(Delete the 1 over $2\pi i$ before the last integral, but leave the minus sign.)

p.245, Ex.5, l.1: Change " a closed curve " to " a piecewise smooth closed curve " (insert " piecewise smooth ")

p.252, l.-14: Change " are paths " to " are closed paths " (insert " closed ")

p.252, l.-4: Change " It turns out that if " to " If "

p.253: In the displayed figure, change " S " to " s " (lower case ess)

CHAPTER IX

p.265, Ex.2: Change " $(3+z^2)/(1+3z^2)$ " to " $(1+3z^2)/(3+z^2)$ " (the fraction is upside down)

CHAPTER X

p.278, l.17: Change " $e^{i\theta}$ " to " $re^{i\theta}$ " (insert " r ")

p.280, Ex.8(a), l.-2: In the displayed equation, change " $z = e^{i\theta}$ " to " $z = re^{i\theta}$ "

p.282, Ex.2-5: Replace Exercises 2, 3, 4, and 5 by the following Exercises 2, 3, and 4:

2. Assume $u(x,y)$ is a twice continuously differentiable function on a domain D.
(a) For $(x_0,y_0) \in D$, let $A_\varepsilon(x_0,y_0)$ be the average of $u(x,y)$ on the circle centered at (x_0,y_0) of radius ε. Show that

$$\lim_{\varepsilon\to 0} \frac{A_\varepsilon(x_0,y_0) - u(x_0,y_0)}{\varepsilon^2} = \frac{1}{4}\Delta u(x_0,y_0),$$

where Δ is the Laplacian operator (Section II.5).
(b) Let $B_\varepsilon(x_0,y_0)$ be the area average of $u(x,y)$ on the disk centered at (x_0,y_0) of radius ε. Show that

$$\lim_{\varepsilon\to 0} \frac{B_\varepsilon(x_0,y_0) - u(x_0,y_0)}{\varepsilon^2} = \frac{1}{8}\Delta u(x_0,y_0).$$

3. For fixed $\rho > 0$, define $h(z) = e^{i\rho \operatorname{Im} z}$. Show that if ρ is a zero of the Bessel function $J_1(z)$, then $\int_\gamma h(z)\,dz = 0$ for all circles γ of radius 1. *Suggestion.* See the Schlömilch formula (Exercise VI.1.3).

4. Suppose that $r_1, r_2 > 0$ are such that r_2/r_1 is a quotient of two positive zeros of the Bessel function $J_1(z)$. Show that there is a continuous function $g(z)$ on the complex plane such that $\int_\gamma g(z)\,dz = 0$ for all circles of radius r_1 and for all circles of radius r_2, yet $g(z)$ is not analytic. Use the preceding exercise together with the fact (easily derived from the differential equation in Section V.4) that $J_1(z)$ has zeros on the positive real axis. *Remark.* The condition is sharp. If r_2/r_1 is not the quotient of two positive zeros of the Bessel function $J_1(z)$, then any continuous function $f(z)$ on the complex plane such that $\int_\gamma f(z)\,dz = 0$ for all circles of radius r_1 and r_2 is analytic, by a theorem of L. Zalcman. There is an analogous result for harmonic functions and the mean value property. According to a theorem of J. Delsarte, if $r_1, r_2 > 0$ are such that r_2/r_1 is not the quotient of two complex numbers for which $J_0(z) = 1$, then any continuous function on the complex plane that has the mean value property for circles of radius r_1 and r_2 is harmonic.

p.287, Ex.7, l.4: Change " IX.2.3 " to " IX.2.1 "

p.288, Ex.10(d): Make changes in lines 1 and 3, so that Exercise 10(d) reads as follows: Show that if $\varphi(z)$ is a solution of Schröder's equation (analytic at 0 and satisfying $\varphi(0) = 0$, $\varphi'(0) = 1$), and if $\varphi(x)$ is real when x is real, then $\varphi(z)$ maps the angle between the positive real axis and γ to the angle between the straight line segments at angles 0 and θ_0.

CHAPTER XI

p.295, l.7: Change " domain " to " domain in the plane " (insert " in the plane ")

p.295, l.8: Change " the complement " to " it "

p.296, l.11: Change " on the side " to " on one side "

p.296, l.12: Change " on other side " to " on the other side "

p.297: In the displayed figure, change " $\alpha\pi$ " to " $\pi\alpha$ " and reverse the direction of the arrow to the left of the alpha so that the arrow points up rather than down

p.298, l.-13: In equation (3.2), change " 2 " to " $\alpha + 1$ " (change fraction " 2 over zee " to " $\alpha + 1$ over zee ")

p.299, l.-11: Change " do not " to " may not "

p.300: In the displayed figure, change " α_0 " to " α_1 ", change " α_1 " to " α_2 ", and change " α_2 " to " α_3 " (increase each subscript by one)

p.304, l.-3: Change " (4.3) " to " (3.4) "

p.308, l.10: Change " XIV " to " XII "

p.311, Ex.9(a), l.1: Change " B " to script cap " F ". Use the same font for script cap eff as later in the same line.

p.313, l.8: Insert " $\varphi(z_0) = 0$, " before " and "

p.313, l.15: Change " $(z_0|$ " to " $(z_0)|$ " (insert right parenthesis after subscript zero)

p.313, l.17: Change " give another " to " sketch a different "

CHAPTER XII

p.316, l.-1: Change " no zeros " to " no zeros near z_0 "

p.319, Ex.3, l.1: Change " $z/(z+\varepsilon)$ " to " $f_\varepsilon(z) = z/(z+\varepsilon)$ " (insert " $f_\varepsilon(z) =$ ")

p.319, Ex.4, l.1: Change " $1/(z+\varepsilon)$ " to " $z^3/(z+\varepsilon)$ " (change " 1 " to " z^3 ")

p.319, Ex.8, l.3: Change " VIII.4.2 " to " VIII.4.5 "

p.320, l.-3: Change " $h(z)$ " to " $h(\zeta)$ " (change zee to zeta)

p.324, Ex.11, l.7: Change " $\psi(z)$ " to " $\psi(w)$ " (change zee to double-u)

p.331, Ex.14, l.2: Change " **cycle**of " to " **cycle** of " (insert space)

p.336, l.14: Change " compact set subset " to " compact subset " (delete " set ")

p.336, Ex.2, l.1: Insert " whose Julia set is connected " after " $d \geq 2$ "

p.337, Ex.3, l.-1: Change " m " to " $m+1$ " (should read " ζ^{m+1} ")

p.341, Ex.10, l.1: Change " W " to " V "

p.341, Ex.10, l.3: Change " W " to " V "

p.341, Ex.10, l.4: Change " W " to " V "

CHAPTER XIII

p.345, l.2: Change " Δ_j " to " D_j "

p.351, l.3: In the displayed equation, change " $\sin^2(\pi z)$ " to " $\sin^2(\pi\zeta)$ " (change the zee to a zeta)

p.352, Ex.7, l.2: Change " double " to " simple "

p.352, Ex.7, l.3: Delete " $1/(z - \log n)^2 +$ "

p.353, l.13: Change " are " to " is "

pp.357-8, Ex.16(a), l.3-4 (bottom line of p.357 and top line of p.358): Change " uniformly on compact subsets of " to " normally on "

p.359, l.-14: In the displayed equation, change " z " to " ζ "

CHAPTER XIV

p.364, l.8: Change " XIII.3.1 " to " XIII.4.1 " (change " 3 " to " 4 ")

p.367, l.3: Change " $k = 1$ " to " $k = 0$ " beneath the summation sign on the left-hand side of the equation.

p.368, l.2: Change " 1.3(c) " to " 1.3 " (delete " (c) ")

p.368, l.3: Change " $2n-1$ " to " $1-2n$ " (should read " 2^{1-2n} ")

p.372, l.6: Change " above " to " below " p.373, l.-12: In the displayed equation, change the " 1 " just to the left of the big square bracket to " 0 ". (The residue is evaluated at 0.)

p.373, l.-3: Change " above " to " below "

p.374, l.2: Change " $2n + 1/2$ " to " $2n + 1$ " (delete " /2 ")

p.375, Ex.2, l.2-3: Change " that is symmetric with respect to the line $\{\mathrm{Re}\, s = \frac{1}{2}\}$, that is, " to " that satisfies " (replace the passage from "is" to "is," by "satisfies")

p.378, l.-7: In right-hand term of the displayed formula, change " $|s|$ " to " $C\sigma$ ". Add a period at the end of the line.

p.378, l.-6: Delete this line of displayed formula.

p.378, l.-5: Change " in (4.5), we obtain a telescoping series, " to " in (4.5) and sum, we obtain "

p.378, l.-4: Change the middle term of the displayed formula to

$$\varepsilon_m \left(2 + C\sigma \int_m^n r^{-\sigma-1}\, dr \right)$$

p.378, l.-3: Change " we obtain uniform convergence. " to " the series converges uniformly in the sector, and consequently it converges pointwise in the open half-plane. This completes the proof of the theorem. "

p.379, Ex.1, l.1: Change " (4.5) that $\zeta(\sigma) > 0$ " to " (4.6) that $\zeta(\sigma) < 0$ " (change " 5 " to " 6 " and change " $>$ " to " $<$ ")

p.379, Ex.5, l.1: Change " **Mobius** " to " **Möbius** " (add umlaut)

p.379, Ex.5, l.2: Change " n " to " n " (change font)

p.380, Ex.6: Replace Exercise 6 by the following exercise:

6. The **Dirichlet convolution** of the sequences $\{a_n\}_{n=1}^{\infty}$ and $\{b_n\}_{n=1}^{\infty}$ is the sequence $\{c_n\}_{n=1}^{\infty}$ defined by

$$c_n = \sum_{d|n} a_d b_{n/d} \,.$$

Show that if the Dirichlet series $\sum a_n n^{-s}$ and $\sum b_n n^{-s}$ converge in some half-plane to $f(s)$ and $g(s)$ respectively, then the Dirichlet series $\sum c_n n^{-s}$ converges in some half-plane to $f(s)g(s)$.

p.380, Ex.9, l.2: Delete " and determine where they are valid "

p.380, Ex.9: Add the following line after the displayed equations:
" *Hint.* Use Exercise 4. "

p.381, Ex.11(a), l.1: Insert space after " and "

p.383, l.-6: Change " treat " to " treats " p.390, l.9: Change " give " to " sketch "

p.390: In the displayed figure, replace the " t " with an arrow over it by " **t** ", and replace the " n " with an arrow over it by " **n** " (should be boldface tee and boldface en, with no arrows)

p.393, Ex.8, l.3-4: The identity on lines 3 and 4 should read:

$$\rho \int_0^{2\pi} h(\rho e^{i\theta}) d\theta \;=\; \sigma \int_0^{2\pi} h(\sigma e^{i\theta}) d\theta$$

(insert Greek rho before the first integral and Greek sigma before the second integral)

p.394, l.-8: Change " 8 " to " 9 " (should refer to " Exercise 9 ")

p.405-6, Ex.4-5: Replace Exercises 4 and 5 by the following exercise:

4. Let D be a bounded domain, and let $h(z)$ be a continuous function on ∂D. Let $\{D_m\}$ be a sequence of smoothly bounded domains that increase to D. Let $u(z)$ be a continuous extension of $h(z)$ to $D \cup \partial D$, and let $u_m(z)$ be the harmonic extension of $u|_{\partial D_m}$ to D_m. (a) Show that u_m converges uniformly on compact subsets of D to a harmonic function Wh on D. *Hint.* If $u(z)$ is smooth, represent $u(z)$ as the difference of two subharmonic functions, as in Exercise 2.6. (b) Show that Wh depends only on h, and not on the particular extension u of h to D nor on the sequence $\{D_m\}$. (c) Show that W is linear, that is, $W(ah_1 + bh_2) = aW(h_1) + bW(h_2)$. (d) Show that $\tilde{h} \leq Wh$, where $\tilde{h}$ is the Perron solution to the Dirichlet problem. *Remark.* The harmonic function Wh is the **Wiener solution** to the Dirichlet problem with boundary function h. It can be shown that the Wiener solution coincides with the Perron solution.

p.406, l.7: Change " give " to " sketch "

p.406, l.17: Change " We construct a subharmonic barrier at ζ_0. " to " *Proofsketch.* "

p.406, l.21-25: Replace these five lines by the following:

and $\operatorname{Re} f(z) < -1$ for $z \in D \cap D_0$. Define $h(z) = \operatorname{Re}(1/f(z))$ for $z \in D \cap D_0$. Then $h(z) < 0$. Since $\operatorname{Re} f(z) \to -\infty$ as $z \to \zeta_0$, $h(z) \to 0$ as $z \to \zeta_0$, and $h(z)$ is "almost" a barrier at ζ_0. The difficulty is that $h(z)$ might tend to 0 at other boundary points of $D \cap D_0$. The proof is completed by following the procedure in the proof of Bouligand's lemma (pp. 8-9 of Tsuji's book; see the references), in which a genuine barrier at ζ_0 is constructed from $h(z)$.

p.407, l.8: Change " $0 < \varepsilon < |w|$ " to " $|w| < 1 - \varepsilon$ "

p.414. l.-13: Change " $\log(z - \zeta)$ " to " $\log |z - \zeta|$ " (replace parentheses by vertical bars)

p.416, Ex.11, l.1-2: Change " the point at ∞ " to " the exterior of a disk "

CHAPTER XVI

p.418, l.-15: Change “ near sighted ” to “ nearsighted ” (it’s one word)

p.418, l.-2: Change “ π ” to “ z ” (should read “ $z_\alpha^{-1}(D_0)$ ”)

p.418, l.-1: Change “ π ” to “ z ” (should read “ $z_\beta^{-1}(D_1)$ ”)

p.423, Ex.3(b): Part (b) of the exercise should read: “ (b) if the pole is not simple, a coordinate can be chosen with respect to which $f(p)$ has residue zero at p_0. ”

p.423, Ex.6, l.4: Change “ Δ ” to “ $\mathbb{D}$ ”

p.425, Ex.13, l.2: Change script cap ell subscript tau to “ L_τ ” (the cap ell should be the same font as in the line above it)

p.426, Ex.14(d), lines 2 and 4: Change “ $z - d/c$ ” to “ $z + d/c$ ” (change minus sign to plus sign twice)

p.427, l.-13: Change “ is ” to “ its ”

p.428, l.6: Change “ finite ” to “ finite on ” (insert “ on ”)

p.428, l.-16: Change “ every ” to “ each ”

p.428, l.-15: Delete “ given by ”

p.430, l.13-14: Change the sentence starting the paragraph at line 13 to read as follows: As the upper envelope of a Perron family, $g(p, q)$ is harmonic, and further $g(p, q) \geq 0$.

p.433, Ex.2, l.1: Change “ onto ” to “ to ”

p.434, l.-9: Change “ vectors ” to “ direction ”

p.436, lines -10 and -9: Change “ $z_1(q)$ ” to “ $z_1(p)$ ”, once on each line

p.444, l.19: Change “ unit ” to “ union ”

p.444, Ex.3, l.2: Delete “ one-to-one and ” (should read “ then φ is onto. ”)

p.444, Ex.3, l.3: Delete “ *Remark.* Thus φ is a covering transformation. ” (delete the entire line)

p.446, Ex.10, l.4: Change “ for ” to “ from ” p.447, I.1, Ex.1(d): Should be “ $[-1,1]$ ”

p.448, I.3, Ex.6(b): Change “ $Y_1 - X_2$ ” to “ $Y_1 - Y_2$ ”

p.449, II.2, Ex.4: Should read:
4. Use $(f(z+\Delta z) - f(z))/\Delta z \approx 2az + b\bar{z} + (bz + 2c\bar{z})\overline{\Delta z}/\Delta z$.

p.451, II.7, Ex.2: Change “ Unit circle ” to “ Circle ”, change “ unit disk ” to “ disk ”, and change “ unit circle ” to “ circle, that is, with slope = 1 ”

p.451, II.7, Ex.8: Change “ by $\alpha\delta - \beta\gamma$ ” to “ by the square root of $\alpha\delta - \beta\gamma$ ”

p.451, III.2, Ex.1(b): Change “ $2x^2$ ” to “ $2x^3$ ”

p.452, III.5, Ex.6: Change “ $(z+1)^{\varepsilon} f$ ” to “ $(z+1)^{-\varepsilon} f$ ” (insert minus sign)

p.452, III.5, Ex.9: Change “ $0 < z < \delta$ ” to “ $0 < |z| < \delta$ ”

p.452, III.6, Ex.1: Change “ $(2-1)z$ ” to “ $(2-i)z$ ”

p.453, IV.1, Ex.3(b): Change “ m ” to “ $m+1$ ”. Should be “ $2\pi R^{m+1}$ ”

p.453, IV.1, Ex.3(c):Change “ R^m ” to “ R^2 ”

p.453, IV.4, Ex.1(h): Should be “ $-\pi i/2 \; + \; \pi i/4e^2$ ”

p.454, V.2, Ex.2: Change “ $[1, 1-\varepsilon]$ ” to “ $[0, 1-\varepsilon]$ ”

p.456, VI.2, Ex.3(a), l.2: Change “ part ” to “ parts ”, and change sign three times. Second line should read:

parts $-1/(z \pm \pi/2)$. If $f_1(z) = -1/(z-\pi/2) - 1/(z+\pi/2)$, then $f_0(z) =$

p.457, VII.1, Ex.3(f): Change “ -1 ” to “ $-2/\pi$ ” and change “ $-2\pi i$ ” to “ $-4i$ ”

p.459, VIII.2, Ex.6(b): Should be “ First and fourth quadrants. ”

p.462, IX.2, Ex.12(c): Should be “ for (c) there are two, the identity $f(z) = z$, and $f(z) = -2/z$. ”

p.466, XV.2, Ex.5(a): Should be “ IV.8.7 ”

LIST OF SYMBOLS

p.471: add the following symbols:

$\dfrac{\partial}{\partial z}$ partial derivative with respect to z (Section IV.8)

$\dfrac{\partial}{\partial \bar{z}}$ partial derivative with respect to $\bar{z}$ (Section IV.8)

$f^\sharp$ spherical derivative (Section XII.1)

INDEX

p.476: Between the "Neumann problem" and "normal convergence of meromorphic functions", insert "normal convergence of analytic functions, 137"

p.477: Between "radius of convergence" and "ratio test", insert "Radó's theorem, 432"