List of Corrections and other Changes to the Second Printing of
An Introduction to Complex Analysis
As of November 9, 2005
An asterisk will mark entries made, if any, after May 16, 2005.

Page 23, line 7: Delete "The."

Page 65, first line after the three lines of integrals: But if we take the limits ...

Page 68, last equation: $e^x \sin y + \frac{1}{2}y^2 + C$. It's $\sin y$, not $\cos y$.

Page 113: Exercise 18 should appear later in the book, perhaps at the end of Section 3.1.

Page 114*: In item 11, the y should be θ.

Page 120, line 9: Delete "1.(3)"

Page 127, Exercise 4: No change is suggested, but notice that this Exercise repeats Exercise 14 on page 112.

Page 144, in display (11), insert a right parenthesis: $f(c + i((1-t)b + dt))$.

Page 147, in the definition of convex, mid-page: ... if for every pair of points $p, q \in A$, the line segment $[p, q]$ is contained in A.

Page 148, first line of **E**: $\cdots$ function on the open set $\cdots$.

Page 165, item 8, second line: $y + y^2$ should be $y + iy^2$.

Page 165, item 13 should say "Compare Exercise 18, page 113 in Section 2.2."

Page 190, line 6: The numerator of the first integrand should be $f(a + re^{i\theta})$.

Page 206, line -7: "$K \subseteq$" should be "$K \subset$."

Page 206, line -2: In the union, replace "Q_h" with "∂Q_h."

Page 209, Proposition 3.2.5, lines 2, 3: "*... that is, there exists a one-to-one mapping g from O onto O_1 such that g and g^{-1} are holomorphic. Then ...*"

Page 209: After the proof of 3.2.5, insert this paragraph: "In Section 3.5 we will see that in the statement of the Proposition, the requirement that g^{-1} be holomorphic on O_1 may be omitted, since it follows from the rest of the hypothesis."

Page 210, line 7: "Let K_0 be the contour Γ_0. Then ..."

Page 210, line 10: Replace "every z inside Γ_0" with "every $z \in K$"

Page 217, line -8: $f(z)$, not $f(a)$.

Page 218, line 1: Replace "a removable singularity" with "an isolated singularity."

Page 218, line 7: Replace "max" with "sup."

Page 223: In the equation of Example 3.3.16, the a should be i (two places).

Page 224, line 13: $g(z) := \dfrac{z}{z^2+1}$. Line 15: Where $(2x+2)$ appears, it should be $(2z+2)$.

Page 225: Once on line 5 and twice on line 8, the word "Arc" should have the subscript a, thus: $\mathrm{Arc}_a(r, \theta_1, \theta_2)$.

Page 225: Just for the sake of greater clarity, lines 9 and 10 should read as follows: The first integral on the right equals $(\theta_2 - \theta_1) i \mathrm{Res}(f, a)$. The second integral tends to 0 as $r \to 0^+$, since g is bounded near a and the length of the arc is $(\theta_2 - \theta_1)r$.

Page 225: In display (23), w^{n+1} should be w^{k+1}.

Page 231, Exercise 17(b): $\dfrac{z}{z^4-1}$.

Page 235, 17(b): Order 1, residue $-1/4$. 17(c): Order 2, residue $-i/4$.

Page 236, item 35: In three places, $D(0, r)$ should be $D'(0, r)$. Also, in line 2, it should be "$\supset$," not "$\subset$." Note: This Exercise should perhaps be placed in Section 3.5 instead of 3.3. It is do-able after 3.3, but it becomes easier when one knows that a non-constant holomorphic function is an open mapping (Theorem 3.5.1).

Page 239: In the proof of 3.4.3, delete the second sentence, the one beginning "Otherwise ...."

Page 258, in Theorem 3.5.6: Let f be a non-constant holomorphic function ....

Page 271, Exercise 4(d): Let's replace this improper integral with $\displaystyle\int_0^{2\pi} \frac{\sin^2 3t}{2+\sin 2t}\, dt$.

Page 273, line 2: Or, it may be reduced to that example.

Page 275, lines -2 and -1: Let $s > 0$. Then, letting M denote always the maximum of K and L,

$$\lim_{K\to\infty, L\to\infty} \int_{[L, L+iM, -K+iM, -K]} f(z) e^{isz}\, dz = 0.$$

Page 276, in the big display:

On the first line, in the first integral, replace $[L, L+iL]$ with $[L, L+iM]$; and in the second integral, replace $\int_0^L$ with $\int_0^M$.

On the second line, and also in the seventh line, replace $\max_{0\le y\le L}$ with $\max_{0\le y\le M}$ and replace $\int_0^L$ with $\int_0^M$.

On the fourth line, replace $[L+iL, -K+iL]$ with $[L+iM, -K+iM]$ in the first integral; and in the second integral, replace $f(x+iL)e^{isx-sL}$ with $f(x+iM)e^{isx-sM}$.

In the fifth line, replace $f(x+iL)$ with $f(x+iM)$; replace $e^{-sK}2K$ with $e^{-sM}(K+L)$; and replace $K \to \infty$ with $K, L \to \infty$.

In the sixth line, in the first integral, replace $[-K+iL, -K]$ with $[-K+iM, -K]$; and in the second integral, replace $\int_0^L$ with $\int_0^M$.

Finally, revise the footnote on p. 276 to read as follows: We have made an artificial choice in making the height M of the rectangle equal to $\max(K, L)$. It could as well be, for example, $K + L$. The only point is that the height M must grow not too slowly as $K, L \to \infty$, so that $e^{-sM}(K + L) \to 0$.

Page 280, Exercise 2: Delete one of the symbols dx.

Page 281, Exercise 9: The value should be $\pi/16a^3$.

Page 287, lines 6 and 7: "Case 1, when $s > 0$: Let $K > 0$, $L > 0$, and $M = \max(K, L)$. Consider the contour $[-K, L, L+iM, -K+iM, -K]$, which consists of the interval $[-K, L]$ on the real axis and three other segments. Make a sketch. For ..."

Page 287: In the display on line 9: Replace $[-K, L, L + iL, -K + iL, -K]$ with $[-K, L, L + iM, -K + iM, -K]$.

Page 287: In the display on line 13, put x instead of z (two places).

Page 287, lines 11 and 12 should read as follows: "By Jordan's Lemma 4.2.5, the integral over the three segments other than $[-K, L]$ tends to 0. It follows that"

Page 291, in Exercise 6, it should say $\dfrac{\pi}{2e}$.

Page 296, in display (3), it should say ... $\alpha - 2\pi < \theta < \alpha$.

Page 358, display (12): "$iv(0)$" should be "$v(0)$."

Page 360, in the fourth line of the big display, there should be a factor of $1/2\pi$ in front of the integral.