## II. Corrections

Complex Variables with Applications, $3^{\text {rd }}$ edition, A. David Wunsch
Second Printing. A new book bought after May 2007 will probably be a second printing
With Thanks to Christian Hoas of Sweden. Brad Johnston USA, Russell Carden, USA
Note: entries preceded by a star * were made in June 2011
page 28 problem 2 change "multiplication" to "division"
page 29 In the footnote "The expression $\frac{n!}{k!(n-k)!} \ldots$ " there is a factorial missing

* page 306 lines from bottom, $z=r \angle \theta$
page 42, line 2, change "some path of straight line segments" to "some path of arcs or line segments"
page 44 line 3 , change $z \leq 1$ to $|z| \leq 1$
page 46 problem 18 , change $8+i$ to $0.8+i$
page 114 in problem 9 , add " $n \neq 0$ " after (natural log).
page 132 problem 2, change $i^{-1}$ to $i^{-i}$
page 137 For problem 4, section 3.7, there is a sign error in the second answer in the solutions manual: need i 1.76
page 163 line 7 Change $f\left(z_{1}\right)=\frac{1}{s} 4+\frac{i}{16}+1$ to $f\left(z_{1}\right)=\frac{1}{4}+\frac{i}{16}+1$, the expression given for $f\left(z_{1}\right)$ in the text is wrong.
p. 170 problem 2, error in solutions manual, the numerical ans. is correct, but need upper limit of 2 for the y integrals.
p. 189 in EXAMPLE 3 part c) " Verify Theorem 8 ...",should be changed to "Verify Theorem 7"
page 199 problem 4, should read "around" $|z|=2$ not $|z=2|$.
page 199 problem 6, error in solution manual, need $\sqrt{3}$ in denominator in answer
page 211 problem 1 should have $\frac{1}{2 \pi} \int_{0}^{2 \pi} e^{e^{i \theta}} d \theta=1$ [note that the $d \theta$ is missing in the text.]
page 237 On the top line of the page , should refer to Eq. (5.2-8) not Eq. (5.2-7).
page 238 DEFINITION (Absolute and Conditional Convergence) The word Conditional should be deleted from the definition.
page 244, " Solution . From Eq. (5.2-7) .." should change (5.2-7) to (5.2-8).
page 244 EXAMPLE "convergent in any 1 circular region" remove the 1 .
page 244 Four rows from bottom of page, change "From Eq. (5.2-7)..." to "From Eq. (5.2-8)..."
page 247 problem 5 , there is a mild error in the solutions manual where the sum of the series of $M_{n}$ terms is incorrectly stated.
page 261 problem $18, \frac{1}{z^{1 / 2}+1}$ should appear on the left side of the equation, i.e., change the minus sign on the left in the text to a plus sign.
page 275 line 6 should read "with the aid of (a)..." i.e. change the (b) in the text to (a).
page 291 "In Figure 5.6-5 (a), we have plotted ...", note that the (a) is missing in the text.
page 305 change wording in problem 14 to read "... is analytic in the disc $|z| \leq r$ where $r<1$, and is undefined for $|z| \geq 1$."
page 307, problem 17, you must assume that $\mathrm{f}(\mathrm{z})$ is real everywhere on the real axis page 308 bottom line, at the end of the line we want $|z| \geq 1 / r$. that is replace $r$ with $1 / r$.
page 314 In Equation(5.8-11) change the lower case $f(w)$ to the cap $F(w)$
page 341 In problem 6 we want $\oint \cosh (1 / z) d z$, i.e., remove the $\sum$
page 351 problem 20 answer in solutions manual is partly incorrect. Have simple pole at $\mathrm{z}=1$, other poles are second order
page 357 problem 4 The solutions manual fails to state that the residue at 1 is zero.

The discussion showing that there is no pole at $\mathrm{z}=0$ is incorrect, although there is no pole here. The limit of $z f(z)$ as z tends to zero is zero, not one.
page 397 line 7 in the integral
$i \pi \int_{-R}^{-\varepsilon} \frac{d x}{z^{2}+4}$ change the $z$ to $x$ in the denominator to read $i \pi \int_{-R}^{-\varepsilon} \frac{d x}{x^{2}+4}$
pages 416-430. Note that $\lim \varepsilon \rightarrow 0$ should be changed to $\lim \varepsilon \rightarrow 0+$ throughout section 6.10.
page 4425 lines from bottom of page, "To choose another example, it ..." change "it" to "if"

## page 444 :

## line 7 should read

$f(z)=(z-\zeta)^{n} \phi(z) \quad$ (6.12-4a)
we have added an equation number here that is (6.12-4a)
line 10 should read " Note that.... Differentiating Eq. (6.12-4a) we arrive at"
we have changed the equation number from Eq.(6.12) to Eq.(6.12-4a)
line 12 should read "Dividing Eq.(6.12-4b) by Eq.(6.12-4a), we obtain"
page 445 First line of the second paragraph should read
"Equations (6.12-6) and (6.12-3) provide two different ways...' Note that we have changed the first equation number which used to be (6.12-2).
page 445 remove the second bullet mark and move it to page 447 at the end of the first paragraph, after the words "in this case."
page 447 lines 2 and 3, "(compare with Eq. (6.12))" should be changed to "(compare with Eq. (6.12-4a))"
page 449 problem 3, second figure in the solutions manual for this problem is upside down, e.g., d' should be in upper half plane
page 492 line 14, Eq.(6.2-10) is wrong and should be changed to Eq.(6.12-9)
page 505 line 11 should read $\int_{a}^{b} f(x) \delta^{(n)}(x) d x=\int_{a}^{b}(-1)^{n} f^{(n)}(x) \delta(x) d x$. The present expression $\int_{a}^{b} f(x) \delta^{(\prime)}(x) d x=\int_{a}^{b}(-1)^{\prime \prime} f^{())}(x) \delta(x) d x$ is wrong.
page 529 final paragraph should read :
" as a pair of equations $u=u(x, y)$ and $v=v(x, y)$."
Note that the $u$ is missing in $u(x, y)$.
page 662 section 3.511 c ) Note $-2+i$ is not in cut plane. [the word plane is missing]
page 669 the index entry for Bessel function, modified, should be changed to page 404
page 669 The index entry for "accumulation point " should be pages 43,47 not the pages listed here
page 672 at the top left of page, the index entry for both "simply connected" and "multiply connected " should be page 42, not the page number stated here.
page 674 The index entry for limit point should be changed to page 43 from page 42.
page 675 in index Ratio test 231, 240
page 678 need to add residue at infinity to index. References are on pages 359-60.

