II. Corrections

Complex Variables with Applications, 3rd 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 $\frac{n!}{k!(n-k)!}$..." there is a factorial missing

* **page 30** 6 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 $z \le 1$ to $|z| \le 1$

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 $f(z_1) = \frac{1}{s}4 + \frac{i}{16} + 1$ to $f(z_1) = \frac{1}{4} + \frac{i}{16} + 1$, the expression given for $f(z_1)$ 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 $|z| \le r$ where r < 1, and is undefined for $|z| \ge 1$."

page 307, problem 17, you must assume that f(z) is real everywhere on the real axis **page 308** bottom line, at the end of the line we want $|z| \ge 1/r$. 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 $\oint \cosh(1/z) dz$, i.e., remove the \sum

page 351 problem 20 answer in solutions manual is partly incorrect. Have *simple* pole at 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 z = 0 is incorrect, although there is no pole here. The limit of zf(z) as z tends to zero is zero, not one.

page 397 line 7 in the integral

$$i\pi \int_{-R}^{-\varepsilon} \frac{dx}{z^2 + 4}$$
 change the z to x in the denominator to read $i\pi \int_{-R}^{-\varepsilon} \frac{dx}{x^2 + 4}$

pages 416- 430. Note that $\lim \varepsilon \to 0$ should be changed to $\lim \varepsilon \to 0 +$ throughout section 6.10.

page 442 5 lines from bottom of page, "To choose another example, it ..." change "it" to "if "

page 444 :

line 7 should read

 $f(z) = (z - \zeta)^n \phi(z)$ (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 $\int_{a}^{b} f(x)\delta^{(n)}(x)dx = \int_{a}^{b} (-1)^{n} f^{(n)}(x)\delta(x)dx$. The present expression $\int_{a}^{b} f(x)\delta^{(n)}(x)dx = \int_{a}^{b} (-1)^{n} f^{(n)}(x)\delta(x)dx$ 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 3.5 11 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.