

**MA525      ASSIGNMENT SHEET      Spring 2008**

Text: E. Saff, A. Snider *Fundamentals of Complex Analysis*, Third Edition

*We hope to cover most of the text, and in particular give full attention to some very interesting applications. This sheet will be updated throughout the semester, and I will make some remarks on several of the homework problems.*

*Usually homework will be collected at each class. We will not be strict on reading proofs, but the grader/instructor should be convinced that you understand the issue that is being raised, and you can express yourself clearly (for homework, quizzes and exams).*

*The course will move fast, and it is important to come to class. In addition to office hours, feel free to send me (a reasonable amount of) email about questions on homework, etc. (version10/4)*

D. Drasin, MA 622, 4-1974; e-mail: drasin@math.purdue.edu

**Office Hours:** T 10:45-11:15; W 2:30-3:30

Lesson	Section	Study	Homework Assignment
1	1.2	Introduction	p 12: 3, 5[there is a clever solution!], 8 [m 13, 14
	1.3	Polar coordinates; arg, Arg	p. 22: 7 a,e,h, 10 [is this true for Arg in p 17, 20 (law of cosines), 28
2	1.4, 1.5	Complex exponential  (tentative: logarithm)	p. 31: 1c, 3 b,c, 7, 8, 13, 14, 20 [if $z \neq 1$ , – these are used in Fourier series, 22. p 3 7c, 8 [from high school!], 10, 16
3	1.6, 1.7	Some “topology”	p. 123: 1 a,c,d, 3, 5ac [this is a quadratic
4	2.1 - 2.2	Complex functions, limits	p. 42: 2-7, 15, 17, 20; p.50 3, 5 a,c,e
5	2.3, 2.4	$f'$ , Cauchy-Riemann	p. 56: 1 a-c, e, 4b, 5b-e,6b, 7a, 8a,b, 9, 13 p. 63: 2, 4, 71bc, 11abd (you should use a p. 70: 3, 4, 7acd, 9cd, 11acdh, 12. p. 73: 2, 5, 6(!), 7(!), 10
6	2.5, 2.6	Harmonic functions	p 84: 1ac, 2, 3c, 5, 8, 15, 17a, 18 p. 90:2
7	3.1, 3.2	High School Math	p. 108: 1, 4, 5 (yalar!), 11a-c, 14 p 115: 5acf, 6, 9cd, 14ab, 17ab
8	Quiz, logarithm	3.3	p. 123: 12, 18 (def. of log)
9	3.4, 3.5	More harmonic	p. 129: 1, 2, 5, 6. p. 137: 4, 7, 8, 12a, 15ab

104.1-2	review	p. 159: 1ab, 5, 13	
11	4.3	Fundamental Theorem!	p. 170: 3acd, 5, 6ab, 12, 14ab
12	4.4b	Cauchy Theorem	p. 178: 1aehi, 4, 5, 7
13	4.5, 4.6	(Oct. 5) First consequences	p. 200: 7ab, 9def, 11, 13, 16
14	4.7, 5.1	(Oct 7) Harmonic Ftns., intro. to series	p. 212: 3a-d, 5, 8, 13
15	5.2, 3	(Oct. 14) Taylor series, Power series	p. 219: 2, 4, 7, 10, 17
17			p. 225: 2, 4, 8
18			p. 239: 1acef, 7(all), 8, 11(all)
19	5.5	Laurent series	p. 239: 1def, 2cd, 7, 8, 11abd, 13
20	5.6,7		p. 249: 1ef, 3cd, 5aceg, 8ab
21	5.8	review	(Oct. 19) Review for Exam
22	6.1, 6.2	calculus!	(hint for 12: power series)
23	6.3, 6.4	Calculus	(Oct. 21) Hour exam
24	6.5	Calculus, review	p 276: 3, 7ab, 12 (write out the series carefully and look!)
25	6.6	branch points	p. 285: 1, 2 3abc, 6, 12, 13
26	7.1, 7.2	Conformal maps	p. 290: 1, 5, 7
27	7.3	Möbius	p. 301: 2, 3, 5
28	7.5	Schwarz-Christoffel	p. 313: 1abch, 3, 7
			p. 317: 1, 5, 6
			p. 325: 3, 6, 9
			p. 336: 1, 3, 10
			p. 344: 2, 4, 5
			p. 354: 1, 3, 5, 8
			p. 374: 2bc, 3
			p. 382: 1a, 3 ( $ \alpha  > 1$ only), 5, 11a-d
			p. 392: 3acde, 5, 8, 11, 12
			p. 416: 3, 4, 5