

Math 109 Fall 2003 Schedule

Class	Date	Topic	Group Work in Class	Assignment	Due Today
1	Aug. 25	Course Introduction Paper 1 Assigned 1.1 and 1.2 Problem Solving	Solve problems from text	Read MWC through Chapter 5. Take notes (see Paper 1 Assignment). Solve problem for your group.	
2	Aug. 27	1.3 and 1.4 Problem Solving	Solve new problems from handout.	Read MWC through Chapter 10. Solve new problem. Eratosthenes card.	
3	Aug. 29	Problem Solving	Present solutions.	Read MWC through Chapter 20. Essay: your problem	
4	Sept. 3	2.3 Primes and Eratosthenes	Eratosthenes Sieve	Read MWC through Chapter 27. Euclid and Al-Kwarizmi cards.	Eratosthenes card. Essay: your problem
5	Sept. 5	2.3 Prime factorization, Eratosthenes' calculation of circumference of the earth, Euclid		Finish reading MWC. 2.3 HW	Euclid card
6	Sept. 8	Prove: infinitely many primes	Examples of creating new prime numbers	Fermat and Wiles cards 2.3 HW	MWC notes
7	Sept. 10	Prove: infinitely many primes		2.3 HW and Essay: prove infinitely many primes	2.3 HW
8	Sept. 12	2.3 Fermat and Wiles Fermat's Last Theorem	Open Questions in Number Theory	Finish worksheet	Essay: prove infinitely many primes. Fermat and Wiles

					cards.
9	Sept. 15	2.6 What Is Mathematics? Prove: $\sqrt{2}$ is irrational		Archimedes, Hypatia, Pythagoras, Bhaskara cards	Remember your conference time!
10	Sept. 17	Peer Review of Paper 1 Draft 2.6 rational vs. irrational numbers	Peer Review 2.6 text problems	Essay: prove $\sqrt{2}$ is irrational	First Draft of Paper 1 Bring 2 copies.
11	Sept. 19	2.7 the real number line	2.7 text problems	2.6 HW 2.7 HW	Essay: prove $\sqrt{2}$ is irrational
12	Sept. 22	Archimedes' estimation of pi Test 1 Review		Study for Test 1	
13	Sept. 24	Test 1 on Chapters 1 and 2			
14	Sept. 26	3.1 and 3.2 One-to-one correspondence Natural numbers, Integers		3.1, 3.2 HW Cantor card	
15	Sept. 29	Paper 2 Assigned 3.2 Q equivalent to N		3.1, 3.2 HW Essay: Q is equivalent to N	Paper 1 Final Draft Bring 2 copies.
16	Oct. 1	3.3 R is not equivalent to N Cantor's diagonalization		3.3 HW Galileo card Essay: R is not equivalent to N	Essay: Q is equivalent to N
17	Oct. 6	3.3 Cantor, Galileo	Work of a Female Mathematician (Paper 2)		Cantor, Galileo cards Essay: R is not equivalent to N
18	Oct. 8	6.1 and 6.3 Fractals		6.1 and 6.3 HW	
19	Oct. 10	L-system fractals	Fractint software in computer lab	Mandelbrot card	
20	Oct. 13	6.3 Mandelbrot and Julia Set Fractals	Authors' software in computer lab		Mandelbrot card
21	Oct. 15	6.6 Fractal dimension		6.6 HW (Pythagoras card-if not	

				already done from Class 9)	
22	Oct. 17	Review fractals Test 2 Review	6.6 problems	Study for Test 2	
23	Oct. 20	Test 2 on Chapters 3 and 6			
24	Oct. 22	4.1 Pythagorean Theorem: Chinese Proof	Proof with triangle pieces	4.1 HW	Pythagoras card
25	Oct. 24	4.1 Pythagorean Theorem: Bhaskara's Proof	Proof with triangle pieces	Essay: Prove Pythagorean Theorem	Bhaskara card
26	Oct. 27	4.2 Art Gallery Problem	Handout	4.2 HW	Essay: Prove Pythagorean Theorem
27	Oct. 29	4.2 Art Gallery Theorem		4.2 HW Gauss card	
28	Oct. 31	Introduction to Flatland	Flatland Lab	Begin reading Flatland. Take notes (see directions). Abbott card	
29	Nov. 3	Peer Review of Paper 2 4.6 Spherical Geometry	Spherical Geometry Lab	Read 4.6 pages _____ Einstein card	First Draft Paper 2 Bring 2 copies. Remember your conference time!
30	Nov. 5	4.6 Hyperbolic Geometry	Hyperbolic Geometry Lab	Read 4.6 pages _____	
31	Nov. 7	4.6 The Shape of Space		Finish reading Flatland part I. Begin reading Flatland Part II. Take notes!	Gauss, Einstein cards
32	Nov. 10	Review 4.6 geometries	Discuss and begin writing essay	Essay: Non-Euclidean Geometries	Final Draft Paper 2 Bring 2 copies
33	Nov. 12	5.3 Mobius band	Mobius band lab	Finish reading Flatland Part II.	Essay: Non-Euclidean Geometries

34	Nov. 14	Flatland discussion Flatland video	Group discussion from reading.		Flatland notes from reading.
35	Nov. 17	4.7 The Fourth Dimension	Travel to the Fourth Dimension!	4.7 HW	
36	Nov. 19	Test 3 Review		Study for Test 3	
37	Nov. 21	Test 3 on Chapter 4 and Flatland			
38	Dec. 1	What is Mathematics?	Make timeline from cards	Newton card	
39	Dec. 3	The Mathematical Experience	Discuss timelines		
40	Dec. 5	Final Exam Review	The Math Life video	Study for Final Exam	