

Mathematics 243

Spring Semester 2010 -- Daily Homework Log

Week	Date	Class Topic	Homework Problems
1	Jan 18	Martin Luther King Holiday	
	Jan 20	8.1 Sequences	8.1: 3, 5, 7, 9, 11, 15, 33, 35
	Jan 22	8.1 Sequences & 8.2 Series	8.2: 1, 2
2	Jan 25	8.2 Series & 8.3 Integral Tests	8.2: 5, 7, 9, 11, 13, 19, 27 & 8.3: 1
	Jan 27	8.3 Integral Test	8.3: 3, 5, 7, 9, 11, 13, 15, 17, 21, 27
	Jan 29	8.3/8.4 Comparison & Alternating Series Tests	8.4: 2, 3 - 13 odd
3	Feb 1	8.4 Other Convergence Tests	8.4: 19, 21, 23, 25, 27, 31, 33, 39
	Feb 3	8.5 Power Series	8.5: 2, 3, 7, 11, 13, 17, 19
	Feb 5	8.6 Representing Functions as Power Series	8.6: 1 - 11 odd
4	Feb 8	8.6 Representing Functions as Power Series	8.6: 15 - 27 odd
	Feb 10	Canceled Class	Canceled Class
	Feb 12	8.7 Taylor & Maclaurin Series	8.7: 2, 3, 6, 8, 11, 13, 15
5	Feb 15	8.7 Taylor & Maclaurin Series	8.7: 23, 27, 31, 43, 47
	Feb 17	Review	
	Feb 19	Exam 1	
6	Feb 22	9.3 Polar Coordinates	9.3: 7 - 35 odd (notice there are 15 problems)
	Feb 24	9.4 Area & Length	9.3: 46, 47, 53 & 9.4: 5, 11, 17, 19, 23, 29
	Feb 26	10.1 3D Coordinate Systems	10.1 1, 3, 5, 7, 11
7	Mar 2	10.6 Cylinders & Quadric Surfaces	
	Mar 3	10.6 Cylinders & Quadric Surfaces	10.6: 3, 5, 7, 23, 25, 27
	Mar 5	11.1 Functions of Several Variables	11.1: 1, 5, 9, 15, 17, 19, 25, 29
8	Mar 8	Spring Break	
	Mar 10	Spring Break	
	Mar 12	Spring Break	
9	Mar 15	11.2 Limits	
	Mar 17	11.2 Continuity	
	Mar 19	Review	
10	Mar 22	Exam 2	
	Mar 24	11.3 Partial Derivatives	
	Mar 26	11.3 Partial Derivatives	
11	Mar 29	11.4 Linear Approximations	
	Mar 31	11.5 Chain Rule	
	Apr 2	11.5 Chain Rule	
12	Apr 5	11.7 Maximum & Minimum Values	
	Apr 7	11.7 Maximum & Minimum Values	
	Apr 9	Integration Review	
13	Apr 12	12.1 Double Integrals over Rectangles	
	Apr 14	12.2 Double Integrals in General	
	Apr 16	12.3 Double Integrals in Polar Coords.	
14	Apr 19	12.4 Applications in Double Integrals	
	Apr 21	Celebration of Scholarship	
	Apr 23	12.5 Triple Integrals	
15	Apr 26	12.6 Triple Integrals in Cylindrical Coords.	
	Apr 28	12.7 Triple Integrals in Spherical Coords.	
	Apr 30	Review & Catch up	
	May 4	Final Exam from 2:00 - 3:50 PM	

Group Homework 1. Due Monday 2/1/10 in class.

1. (a) Fibonacci posed the following question: Suppose that rabbits live forever and that every month each pair produces a new pair which becomes productive at the age of 2 months. If we start with one newborn pair, how many rabbits will we have in the n th month? Show that the answer is f_n , where $\{f_n\}$ is the sequence defined in Section 8.1 Example 3c.

(b) Let $a_n = f_{n+1} / f_n$ and show that $a_{n-1} = 1 + 1/a_{n-2}$. Assuming that $\{a_n\}$ is convergent, find its limit.

2. A ball dropped from a height of 10 ft begins to bounce. Each time it strikes the ground, it returns to two-thirds of its previous height. What is the total distance traveled by the ball if it bounces infinitely many times?

Group Homework 2: Due 2/12/10

8.4 #42 & 8.5 #21