Assignments

Math 791: Modern Algebra

Spring 2019

Lecture	Day	Date	Homework	Reading
	W	5/15	Final exam	
28	Θ	5/9	5.2: #1, 4, 9	–
27	T	5/7	†below; 4.5: #1, 4, 5, 13, 16, 30	5.2
26	Θ	5/2	3.3: #2****, 3, 4, 7	4.5
25	T	4/30	3.2: #2, 8, 11, 16; 3.3: #1	3.3, 4.5
24	Θ	4/25	3.1: #3, 14, 17***, 20, 34, 35	3.2 – 3.3
23	T	4/23	2.3: #14, 15; 3.1: #2, 6 - 9, 12; prove *Theorem* 7 (2)	3.1 – 3.2
22	Θ	4/18	2.2: #2, 6; 2.3: #2, 6, 7, 12, 13	2.4 – 2.5, 3.1
21	T	4/16	1.6: #5, 17, 18; 2.1: #4, 5, 6, 7	1.6, 2.1 – 2.2
	Θ	4/11	Midterm 2	–
20	T	4/9	1.1: #6, 7, 13 - 14, 20, 21, 25	1.3 – 1.4
19	Θ	4/4	**below and 13.4: #1, 3, 4	1.1 – 1.2
18	T	4/2	13.2: #7, 8, 13, 14	13.4
17	Θ	3/28	13.2: #1, 2*, 3, 4, 5	13.2, 13.4
16	T	3/26	13.1: #1, 2, 3, 4	13.2
15	Θ	3/21	7.5: #3, 4	7.5, 13.1
14	T	3/19	9.2: #2; 9.4: #6, 8; 13.1: #4	13.1
13	Θ	3/7	9.2: #8, 9, 10; 9.4: #2, 11, 12, 16	13.1
	T	3/4	Midterm 1	–
12	Θ	2/28	9.4: #1, 3 - 5, 13, 14, 20	9.4 – 9.5
11	T	2/26	9.1: #5; 9.2: #1, 5, 6; 9.3: #2	9.3
10	Θ	2/21	7.6: # 1 - 5, 7	9.1 – 9.2
9	T	2/19	7.4: #7, 9, 13; Daily Update Problems	7.6
8	Θ	2/14	7.3: #36; 7.4: #8, 12, 14, 16; prove the *Second Isomorphism Theorem*	7.6
7	T	2/19	7.3: #13, 20, 24, 26, 29, 34	7.4
6	Θ	2/7	Quotient Rings Worksheet	7.4
5	T	2/5	7.3: : #1, 2, 7, 8, 9, 10, 17	7.4
4	Θ	1/30	7.2: #8; 7.3: #4, 5, 6	7.3
3	T	1/29	7.2: #1, 2, 3, 4	7.3
2	Θ	1/24	7.1: #3, 5, 6, 7, 13, 18, 26	7.2 – 7.3
1	T	1/22	Prove *Proposition* 1 (3), (4); 7.1: #1, 2, 14, 15, 17	7.1 – 7.2, 0.3

*For 13.2.2, you do not need to show that the nonzero elements form a cyclic group.
**Find a nice characterization of the splitting field of $x^3 - 2 \in \mathbb{Q}[x]$, and use it to find the degree of the extension over $\mathbb{Q}$.
***Find the muliplication table for the Klein 4 group on page 68.
****Prove the bijection and properties (1) and (4) in the text.
†Prove that a group of prime order must be cyclic, and every nonidentity element is a generator.