MATH 546 — Spring 2023— Notes about EXAM 3

(1) Exam 3 is on Wednesday, April 5, 2023. The exam covers the entire course up until the end section 6 about Normal subgroups, Quotient groups, and the First Isomorphism Theorem. In particular, the exam covers pages 4-34 of the class notes, Homework problems 1–20, 27–30, 33–42,49, 50, 54, 55 and questions 3.11, 3.12, 6.13 and 6.18 from the class notes.

(2) Be able to write the formal definition of all concepts from the course, the formal statement of all results from the class, and formal proofs of all results from the class.

(3) Be sure to MASTER all of the assigned homework.

(4) Be sure to MASTER all of the quizzes.

(5) The material on the old MATH 546 exams which is covered on your exam 3:

- Exam 1's:
    - 1993: 1, 2, 3, 4, 5.
    - 1994: 1, 2, 3, 4, 5, 6, 7.
    - Spring 2001: 1, 2 3, 4, 5, 6, 7, 8.
    - Summer 2001: 1,2, 3, 4, 5, 6, 7, 8, 9.
    - Summer 2002: 1, 2, 3, 5, 6, 7, 8.
    - Spring 2004: 1, 2, 3, 4, 5, 6, 7, 8.
    - Fall 2004: 1, 2, 3, 4, 5, 7, 8.
    - Spring 2010: 1, 2, 3, 4, 5
    - Fall 2011: 1, 2, 3, 4, 5
    - Fall 2022: all.
    - Spring 2023: all.
- Exam 2's:
    - 1993: 3, 4, 5 (In 4 and 5, S_A is the group of invertible functions from A to A. The operation is composition.)
    - 1994: 1, 2, 3, 5, 6.
    - Spring 2001: 1, 2, 3, 4, 5, 7.
    - Summer 2001: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
    - Summer 2002: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
    - Spring 2004: 1, 2, 3, 4, 5, 6, 7.
    - Fall 2004: 1, 2, 3, 4, 5, 6, 7, 8.
    - Spring 2010: 1, 2, 3, 4, 5, 6.
    - Fall 2011: 1, 2, 3, 4, 5, 6, 7, 8.
    - Fall 2022: all.
    - Spring 2023: all.
- Exam 3's:
    - 1993: 1, 2, 3, 4, 5.

- 1994: 1, 2, 3, 4, 5, 6, 7.
- Spring 2001: 4, 5. (In these problems S_A and $\text{Sym}(A)$ both are the group of invertible functions from A to A. The operation is composition.), 7,9.
- Summer 2001: 1, 2, 3, 5a, 6, 8, 9.
- Summer 2002: 1, 2, 3, 4, 5, 6, 7, 8, 9.
- Spring 2004: 1, 3, 5, 6, 7, 8.
- Fall 2004: 1, 2, 3, 6, 7, 8.
- Spring 2010: 1, 2, 3, 4, 5, 6, 7
- Fall 2011: 1, 2, 3, 4, 5, 6, 7, 8,
- Fall 2022: all.

- Exam 4's:
  - Spring 2001: 1, 2, 3, 4, 5, 7, 10.
  - Summer 2001: 8, 9, 10.
  - Summer 2002: 1,2, 3, 5, 6,8,9.
  - Spring 2004: 2, 3, 4, 5, 6, 7, 9, 10.
  - Fall 2004: 1, 2, 3, 4, 5, 6, 7.

- Final Exams:
  - 1993: 2, 3, 4, 6, 9,10.
  - 1994: 1, 2, 3, 4, 5, 6, 7, 8c, 10, 11, 12, 13,14.
  - Spring 2001: 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19.
  - Summer 2001: 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 17, 18, 19, 20.
  - Summer 2002: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 18, 20.
  - Spring 2004: 1, 2, 3, 4, 5, 6, 9, 10, 12, 13, 14, 15, 16, 17.
  - Fall 2004: 1, 3, 4, 5, 7, 9, 10, 11, 12, 13, 14.
  - Spring 2010: 1, 2, 3, 4, 5, 7, 8, 9, 10.
  - Fall 2011: 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.
  - Fall 2022: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.