

Math 136, Homework 3, due 02/13

The most likely date of the first midterm is Feb. 27. I will make a definite announcement by Feb. 13.

During the week of Feb. 4 and 6, we shall cover the last bit of chapter 2, chapter 3 and part of chapter 4.

We are going to omit section 5 from chapter 3. You should read sections 4 and 6 of chapter 3, but we won't spend much class time on them. Also, don't worry about example 5.5 from Chapter 2 (the Ackermann function).

The exercises are due 5pm on Feb. 13 on gradescope.

Exercises due Feb. 13:

- (This exercise concerns the proof of theorem 2.2, in the direction $\mathcal{R} \subseteq \mathcal{C}$, which we gave in class.) Let P be the URM

$$P = \langle T(2, 3), J(1, 2, 1) \rangle.$$

Show that the predicate Next^P which we defined in class is primitive recursive. (Recall that $\text{Next}^P(i, j)$ holds iff i codes a computation stage (a, r) , and j codes the stage (b, t) that results from (a, r) by using the instructions of P . You should use the coding of finite sequences using powers of primes that I used in class.)

- From Chapter 3: 7.2, parts 1, 2, and 4 (page 71).
- From Chapter 4: 3.2, parts 1 through 4 (page 80).