MATH 470. Fall 2022.

Homework #6. Due: Oct 18, 11:10am. No late homework will be accepted.

Please write down your solutions clearly or type your solutions. It can be considered incorrect if it is hard to read. Collaboration is allowed, but everyone must write down and submit his/her solutions in his/her own words. Please submit your work to Gradescope.

All the questions mentioned below are in the Exercise part of the corresponding sections in the textbook.

- Required submission questions:

    - Section 3.1: 3.1(a)-(c), 3.2

      (**Instruction:** For Question 3.2(a), two solutions of $x^e \equiv c \pmod{p}$ are considered distinct if and only if they are distinct modulo p (i.e. they are distinct elements in $\mathbb{F}_p$).)

    - Section 3.2: 3.7, 3.9(a)-(c)

    - Section 3.3: 3.13

      (**Hint:** In Question 3.13, $c_2^{-1} \equiv -15762451 \pmod{N}$.)

- Suggested practice:

    - Section 3.1: 3.1(d)(e), 3.4, 3.6

    - Section 3.2: 3.9(d), 3.10

    - Section 3.3: 3.12