Math 525 — Quiz 4 – September 11, 2023

Name:_____

1. In Section 7.6 a definition of *comaximal* ideals A and B is given. What does it mean to say that A and B are comaximal?

2. Does it follow from the definition that if A and B are comaximal, that at least one of A and B is maximal? Give a proof or a counterexample.

3. What is the order and structure of the group $(\mathbb{Z}/12\mathbb{Z})^{\times}$?

4. Find all natural numbers x such that $x \equiv 2 \mod 3$, $x \equiv 3 \mod 5$, $x \equiv 4 \mod 7$, and $50 \leq x \leq 105$.