1) Chapter 1.8 Question 25:
Write the numbers 1, 2, ⋯, 2\(n\) on a blackboard where \(n\) is an odd integer. Pick any two of the numbers, \(j\) and \(k\). Write \(|j - k|\) on the board and erase \(j\) and \(k\). Continue until only one integer is left on the board. Prove that this integer must be odd.

2) Chapter 2.1 Question 45:
The defining property of an ordered pair is that two ordered pairs are equal if and only if their first elements are equal and their second elements are equal. Surprisingly, instead of taking the ordered pair as a primitive concept, we can construct ordered pairs using basic notions from set theory. Show that if we define the ordered pair \((a, b)\) to be \({\{a\}, \{a, b\}}\), then \((a, b) = (c, d)\) if and only if \(a = c\) and \(b = d\).
3) Chapter 2.2 Question 41:

The symmetric difference of $A$ and $B$, denoted by $A \oplus B$, is the set containing those elements in either $A$ or $B$, but not in both $A$ and $B$. Suppose that $A$, $B$, and $C$ are sets such that $A \oplus C = B \oplus C$. Must it be the case that $A = B$?