

Homework 11

via Gradescope

- Failure to submit homework correctly will result in zeroes.
 - Handwritten homework is OK. You do not have to type up your work.
 - Problems assigned from the textbook are from the 5th edition.
 - No late homework accepted. Lateness due to technical issues will not be excused.
-

1. (6 points) Section 9.4 #4, 8.
2. (3 points) Let $n \in \mathbb{Z}^+$ such that $S = \{1, 2, 3, \dots, 2n\}$ and $N(S) = 2n$. For any $T \subseteq S$, if $N(T) = n + 1$, must T contain at least 1 even integer and 1 odd integer? Explain.

Theorem (9.3.3) (Inclusion-Exclusion Principle for Sets). *For any finite sets A, B ,*

$$N(A \cup B) = N(A) + N(B) - N(A \cap B).$$

3. (6 points) Section 9.4 #12, 16.
4. (3 points) Section 9.4 #24.
5. (6 points) Section 9.4 #26, 30.