CSCE 222 Discrete Structures for Computing – Fall 2023

Hyunyoung Lee

Problem Set 2

Due dates: Electronic submission of *yourLastName-yourFirstName-hw2.tex* and *yourLastName-yourFirstName-hw2.pdf* files of this homework is due on **Monday, 9/18/2023 11:59 p.m.** on `https://canvas.tamu.edu`. You will see two separate links to turn in the .tex file and the .pdf file separately. Please do not archive or compress the files. **If any of the two files are missing, you will receive zero points for this homework.**

Name: (type your name here) **UIN: (type your UIN here)**

Resources. (All people, books, articles, web pages, etc. that have been consulted when producing your answers to this homework)

On my honor, as an Aggie, I have neither given nor received any unauthorized aid on any portion of the academic work included in this assignment. Furthermore, I have disclosed all resources (people, books, web sites, etc.) that have been used to prepare this homework.

Electronic signature: (type your full name here)

Total 100 points.

The intended formatting is that this first page is a cover page and each problem solved on a new page. You only need to fill in your solution between the `\begin{solution}` and `\end{solution}` environment. Please do not change this overall formatting.

Checklist:

- ☐ Did you type in your name and UIN?
- ☐ Did you disclose all resources that you have used? (This includes all people, books, websites, etc. that you have consulted.)
- ☐ Did you sign that you followed the Aggie Honor Code?
- ☐ Did you solve all problems?
- ☐ Did you submit both the .tex and .pdf files of your homework to each correct link on Canvas?

Problem 1. (5 + 5 = 10 points) Section 2.6, Exercise 2.53 (a) and (c). Explain.

Solution.

Problem 2. $(5 + 5 = 10$ points) Section 2.6, Exercise 2.54 (b) and (c)

Solution.

Problem 3. $(5 + 5 = 10$ points) Section 2.7, Exercise 2.58 (a) and (e)

Solution.

Problem 4. $(5 + 5 = 10$ points) Section 2.7, Exercise 2.59 (d) and (e)

Solution.

Problem 5. (15 points) Section 2.9, Exercise 2.73 [Hint: Use the property of "consecutive integers" and the definition of an "odd integer".]

Solution.

Problem 6. (15 points) Section 2.9, Exercise 2.80

Solution.

Problem 7. (15 points) Section 2.9, Exercise 2.84

Solution.

Problem 8. (15 points) Section 3.3, Exercise 3.20 [Hint: Use the definitions of $\subseteq$, $\cup$, and the power set.]

Solution.