CMPS 130 **Computational Models**

Homework Assignment 1

- Read sections 0.1 through 0.4 of the book.
- Exercises from pages 25, 26 and 27 of book: 0.1 through 0.9.
- Problems page 27 in 2nd ed 0.10 through 0.12 or in 3rd ed 0.10, 0.12 and 0.13.
- Prove from the definitions of set union, intersection, complement and equality that

$$\overline{(A \cap B)} = (\overline{A} \cup \overline{B})$$

- Show the set of odd numbers is countable.
- Prove by induction on n.

$$\text{For all } n \in \mathcal{N}, \quad \overline{\bigcap_{i=1}^{n} A_i} = \bigcup_{i=1}^{n} \overline{A_i}.$$

- Prove by induction on n that every non-empty finite set of positive integers contains a least element.

Homework Policies: You may study together in small groups and discuss ideas about the homework problems before composing the solutions. You are expected, however, to write the solutions yourselves and not copy them from other students or share your solutions with other students. If you have worked closely with other students on particular problems, then you must mention the names of the people you have worked with and also the problems on which you worked together.