PMAT 505 ASSIGNMENT 3 Due November 5, 2010

1. Munkres p.112, 10. [20]

2. Munkres p.112, 11. [20]

3. Munkres p.112, 12. [20]

4. (a) In any topological space X, show $\overline{A \cup B} = \overline{A} \cup \overline{B}$.

   (b) Show $\overline{A \cap B} \subseteq \overline{A} \cap \overline{B}$, and give an example where equality does not hold. [20]

5. A subset A of a topological space X is called *klopen* iff $A = U \cap C$, where U is open and C is closed. Prove that A is klopen iff $\overline{A} \setminus A$ is closed. [20]