

Math 220 HNR – Homework 8**Due Thursday 11/01 at the beginning of class**

Total points: 190

Problems from the textbook:

problem	4.40*	4.50*	4.56*	4.58*	4.66(a)	4.68
points	10	15	10	10	10	10

PART B

1. *[15 points] Let A , B , C , and D be sets with $C \subseteq A$ and $D \subseteq B$. Prove that $D - A \subseteq B - C$.
2. *[10 points] Let A , B , and C be sets. Prove that $(A \cup B) - C \subseteq (A - C) \cup B$.
3. *[30 points] Let A , B , and C be sets.
 - (a) Prove or disprove: if $A \subseteq B \cup C$, then $A \subseteq B$ or $A \subseteq C$.
 - (b) State the converse of part (a) and prove or disprove.
4. *[30 points] Let A , B , and C be sets.
 - (a) Prove or disprove: if $A \subseteq B \cap C$, then $A \subseteq B$ and $A \subseteq C$.
 - (b) State the converse of part (a) and prove or disprove.
5. *[30 points] Let A , B , and C be sets.
 - (a) Prove or disprove: if $A - C \subseteq B - C$, then $A \subseteq B$.
 - (b) State the converse of part (a) and prove or disprove.
6. *[10 points] Let A be a set. Prove that $A \times \emptyset = \emptyset = \emptyset \times A$.