

Makeup Work: First Homework test:

You should do these problems and hand them in by Thur
March 10.

I will then have you come to my office and present your
proofs. Of course you can
come to my office earlier for help.

Show the following set theoretic properties using **truth
tables**. Remember that to prove $A \subseteq B$
one must show the implication *if $x \in A$ then $x \in B$ is always
true*. To show two sets are equal one
must show that belonging to one set has the same truth value
as belonging to the other. One can
also show by truth tables the implications that $A \subseteq B$ and $B \subseteq A$
are both true to prove that $A=B$.

1. $A \subseteq A \cup B$
2. $A = (A \cap B) \cup (A \setminus B)$
3. $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$