Truth Tables (Section 2.3)

The objectives for this section include:

Review the truth tables for not, and, or connectives.
Compute truth tables for compound statements.
Determine when statements are logically equivalent.
State and apply DeMorgan's laws.

Summary of Logic Rules discussed thus far

Conjunction

P	Q	$P \wedge Q$

Disjunction

P	Q	$P \vee Q$

Negation

P	**~ P**

Complete Quiz Yourself 8 **on p. 97**

P	**Q**	

To prove that two statements are logically equivalent you complete a truth table for each and compare the final column of each. If those final columns are identical then the statements are logically equivalent.

Class Practice-Determine whether $\sim P \vee Q$ and $\sim(P \wedge \sim Q)$ are logically equivalent.

P	Q	$\sim P \vee Q$

P	Q	$\sim (P \wedge \sim Q)$

De Morgan's Law allows us to create an equivalent statement when the original statement has some form of disjunction or conjunction or the negation of one of these.

Steps for Applying De Morgan's Law:

1. Negate the whole statement
2. Negate each statement that makes up the disjunction or conjunction.
3. Change the conjunction to disjunction or the disjunction to a conjunction.

Class Practice

Use DeMorgan's laws to rewrite the negation of:

Jennifer will go to work after class and finish her assignment.

Hint: symbolize, work on the symbols, then translate back.

No Class Wed.

Complete Handout 2.3 and watch video clips linked on Feb 10th

http://www.mnstate.edu/harms/102/Spr10/102U2.htm

& Complete #43, 47, 49, 51, 57, 61, 64, 70 on pp. 102-103