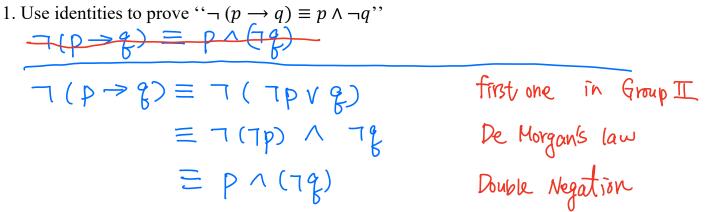
## MAT2440, Classwork7, Spring2025

ID: Name:	
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2. Use identities to prove " $(p \land q) \rightarrow (p \lor q)$ " is a tautology.

$$(pnq) \rightarrow (pvq) \equiv T(pnq) \vee (pvq)$$
 $\equiv (Tpvp) \vee (pvq)$ 
De Morgan's
 $\equiv (Tpvp) \vee (Tqvq)$  cussociative and commutive
 $\equiv T \vee T$  negation
 $\equiv T$ 
domination

3. Group III of the logically equivalences: Identities related to biconditional statements.

$$p \leftrightarrow q \equiv$$
 $p \leftrightarrow q \equiv$ 
 $p \leftrightarrow q \equiv$ 
 $\neg (p \leftrightarrow q) \equiv$ 

4. Predicate logic	e and Propositional function:	
The	allows variables in propositions and enables us to reason and	
explore relatio	nships between objects. A	is a statement with
variables and l	nas been used on predicate logic. O	Once the values have been assigned to
the variables, t	the propositional function becomes	s a
5. Let $P(x)$ denote the statement " $x > 3$ ". What are the truth values of $P(2)$ and $P(4)$ .		
6. Let $Q(x, y)$ de $Q(1,2)$ and $Q($		What are the truth values of the propositions
-	uter programing "If $x > 0$ , then $x = 0$ function to explain it.	= x + 1". Using the terminology of