Math 107 Section 1.3

Name:_____

Truth Value:

Truth Tables: Used to determine if a compound statement is true or false, given all true/false combinations of the simpler statements that make up the compound statement.

Negations:

Conjunctions:

Disjunctions:

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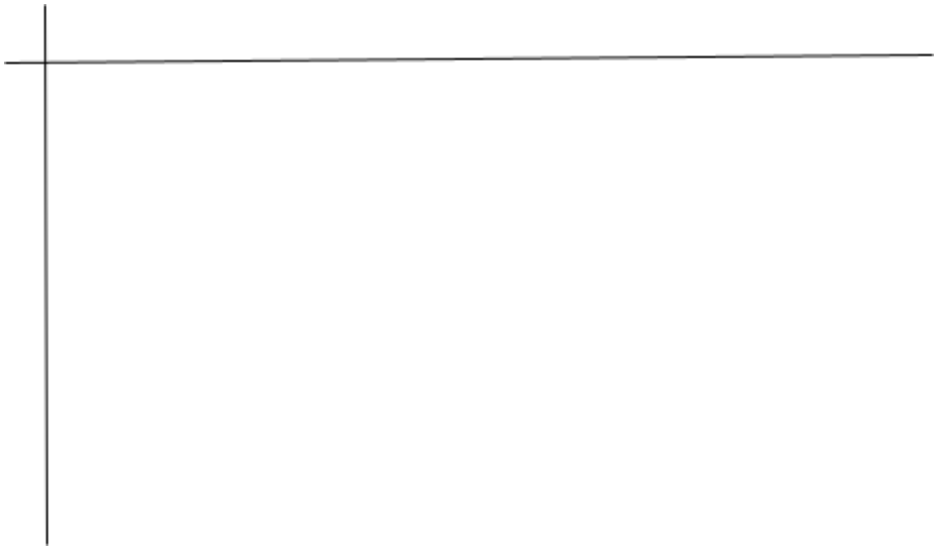
1) Construct a truth table for the following statement:
“Maria drinks tea, or she drinks black coffee and not sugary coffee ”



Conditionals:

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2) Construct a truth table for the following statement:
"If it is raining, then the streets are wet"

3) Construct a truth table for the following statement:
"If I want to exercise or if the elevator isn't working, then I walk up the stairs"

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Equivalent Expressions:

4) Show that $p \equiv \sim(\sim p)$ using a truth table

5) Use a truth table to determine if the following statements are equivalent:
"If I am a homeowner, then I pay property taxes"
"I am a homeowner and do not pay property taxes"

De Morgan's Laws: 1) Negation of a conjunction $p \wedge q$:

2) Negation of a disjunction $p \vee q$:

6) Write (in words) the negation of the following statement:

   a) “It is Friday and I receive a paycheck”

   b) “My computer is broken or the internet is not working”

   c) “Rainy weather is sufficient for watching Netflix”