Math 300 Spring 2011 Homework 02

Due January 31

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Name

Remember, you are not to discuss these problems with anyone with three exceptions: (1) discussions with me are allowed, (2) you may use any information that comes to light during a Brainstorming session and (3) if the directions to the problem specifies you may work with others.
"No, no, you're not thinking, you're just being logical." -Niels Bohr, physicist (1885-1962)

Problems

1. [Not to be turned in.] Be able to answer the review questions on pages 41 and 42. [You may work with others on this problem.]

2. [Not to be turnd in.] Know careful defintions for **all** of the geometric terms or phrases from Exercises $1, 2$, and 3 on page 43 of the text.

3. Do the construction problems from Exercises 14 and 15 that are in the same column of the table below as your name. Provide Euclidean justifications for each of your constructive steps. For this assignment you may use any results from Euclidean geometry as well as previous constructions to justify your steps. Try to do all problems using a collapsible compass and straightedge.

4. Develop a truth table for the logical statements (below) that are in the same column as your name in the table. Give a brief verbal explanation of what the logical statement means.

   (a) $(p \vee q) \Longleftrightarrow (\sim p) \wedge (\sim q)$
   (b) $(p \Longrightarrow q) \Longleftrightarrow ((\sim q) \Longrightarrow (\sim p))$
   (c) $(p \Longrightarrow q) \Longleftrightarrow ((\sim p) \vee q)$
   (d) $\tilde{} [H \Rightarrow C] \Longleftrightarrow (H \wedge \tilde{} C)$
   (e) $(P \wedge (P \Rightarrow Q)) \Rightarrow Q$
   (f) $((P \wedge \tilde{} Q) \Rightarrow (R \wedge \tilde{} R)) \Rightarrow (P \Rightarrow Q)$

Peter	Caitlin	Greg	Joe	Nathan	Billy	Chris M	Matt
Clay	Oscar	Chris L	Wilson	Kate	Kyle	Dakota	James
Text 14.g	Text 14.f	Text 14.e	Text 14.d	Text 14.c	Text 14.g	Text 14.f	Text 14.e
Text 15.a	Text 15.b	Text 15.a	Text 15.b	Text 15.a	Text 15.b	Text 15.a	Text 15.b
T T 4.d	T T 4.e	T T 4.f	T T 4.a	T T 4.b	T T 4.c	T T 4.d	T T 4.e