As for Exercise set 3, overall the class seems to be getting it. However, some students do need:
- to work on the Writing Guidelines (e.g., defining variables, writing conclusions, paragraphs, etc.)
- to (re)work LaTex Lessons 1–3 (e.g., aligning displayed formulas).

As the semester goes on, one will lose more and more points for not tending to these issue.

Before starting to LaTex up Exercise Set 4, work through (as explained the the web page) Lesson 4 (how to make a simple table) at LaTex Lessons. After you work through Latex Lessons 1–4, you will have down almost all the LaTeX you need for the whole course.

Exercise 1. Let P, Q, and R be statements.

Exercise 1a. Contruct a truth table for $P \implies (Q \vee R)$ and $(P \wedge (\sim Q)) \implies R$.

If 1 big truth table becomes too wide to fit on the paper, then you can just make 2 truth tables.

⟨Note you can do a copy-cut-paste from the LaTeX Lesson 4 to save time.⟩

Exercise 1b. Are $P \implies (Q \vee R)$ and $(P \wedge (\sim Q)) \implies R$ logically equivalent, i.e., phrased using notation: is $[P \implies (Q \vee R)] \equiv [(P \wedge (\sim Q)) \implies R]$? Justify your answer (using complete sentences).

Exercise 2. A variant of Exercise 2.1.13.

Complete the following table.

English Form	Hypothesis	Conclusion	Symbolic Form
Two Sample Examples			
If P, then Q.	P	Q	$P \implies Q$
Q only if P	Q	P	$Q \implies P$
Now 5 for you.			
P is necessary for Q			
P is sufficient for Q			
P only if Q			
P if Q			
If $P \vee Q$, then R			

Exercise 3. A variant of Exercise 2.1.14 parts (c), (d), and (i).

Let

- P and Q be true statments,

- U and V be false statements,

- W be a statement but it is not known if W is true or false.

Which of the following statements are true, which are false, and for which statements is it not possible to determine if it is true or false? Justify your conclusions (of course using complete sentences).

Exercise 3c. $P \wedge (W \implies Q)$

Exercise 3d. $W \implies (P \wedge U)$

Exercise 3i. $(P \vee W) \implies (U \wedge W)$