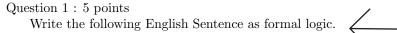
## CS 270 - Deduction Homework

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This homework is worth 100 points.

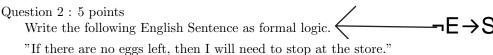
Complete each of the following proofs using Natural Deduction Proof Editor from the Open Logic Project at http://proofs.openlogicproject.org. To submit the assignment do the following:

- 1. Create a word document drexeluserid\_hw2.doc.
- 2. Complete each proof using the website and take a screenshot of the proof. You may only use the Basic Rules of Deduction.
- 3. Copy-Paste each screenshot into the Word Document. Make sure your screenshot includes the part that says either Congratulations! This proof is correct or Sorry there were errors. If you cannot get your answer to work, partial credit will be given. You must include all errors generated by the checker to earn partial credit.
- 4. Export the Word document as a single PDF and submit drexeluserid hw2.pdf to GradeScope.

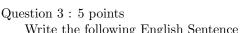


"I'll get into outerspace only if I'm abducted by aliens."

Let S mean "I'll get into outerspace" and Let A mean "I'm abducted by aliens".

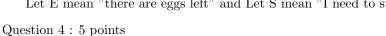


Let E mean "there are eggs left" and Let S mean "I need to stop at the store".



Write the following English Sentence as formal logic. "There are eggs left or I need to stop at the store."

Let E mean "there are eggs left" and Let S mean "I need to stop at the store"



Prove by Truth Table that your answer to Question 2 and your answer to Question 3 are logically equivalent.  $(Q_2 \iff Q_3)$ Construct a proof for the argument:  $A \land B : \neg (\neg A \lor \neg B)$  Construct a proof for the argument:  $A \lor (B \land C) : (A \lor B) \land (A \lor C)$ 

