LING 130:
Sample Quiz 1

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1. Natural Deduction: Propositional Logic
Use pr for premise and as for assumption.
Prove the following: $p \rightarrow q, r \rightarrow s \vdash p \land r \rightarrow q \land s$

2. Natural Deduction: First-order Logic
Use pr for premise and as for assumption.
Prove the following: $\forall x[P(x) \land Q(x)] \vdash \forall x[P(x)] \land \forall x[Q(x)]$

3. First-order Logic Translation
Translate into a first-order expression.
No student attended every lecture.

4. Propositional Logic Truth-table
Fill in the truth table for the following expression: $(p \lor q) \rightarrow \neg r$

5. Types and Type Derivations
Give the type and semantic expression for each of the following words:
a. friend
b. admire
c. slowly
d. any

6. Quantifiers and Entailment
Explain why the quantifier $a$ allows for deductions involving $\land$-elimination.