

HW 5**Due:** 15 September 2009**Prof. Caldwell****COSC 2300**

Read pages 29-37 of the class lecture notes.

In class (and in section 2.6 of the notes) I explained how to match a sequent against the schematic proof rules to create a substitution that can be used to apply a proof rule. Prove the following sequents and show the matches for the various components of the proof rules $(\Gamma, \Gamma_1, \Gamma_2, \Delta, \Delta_1, \Delta_2, \phi, \psi)$ for each step of the proof.

1. $(p \wedge q) \vdash (q \wedge p)$

2. $((p \wedge q) \wedge r) \vdash (p \wedge (q \wedge r))$

3. $p, \perp \vdash ((q \Rightarrow p) \wedge \perp)$