

HW 2**Due:** 3 September 2013**Prof. Caldwell****COSC 3015**

Prove the following. You may use the methods taught by Cowles & Velleman (Givens and Goals) or use the sequent rules from the handout.

1. $\vdash \neg\neg p \Rightarrow p$
2. $\vdash \neg p \Rightarrow (p \Rightarrow \perp)$
3. $\vdash (p \wedge q) \Rightarrow (p \vee q)$
4. $\vdash ((p \wedge q) \vee r) \Rightarrow (r \vee q)$
5. $\vdash (p \wedge (p \Rightarrow q)) \Rightarrow q$
6. $\vdash ((p \wedge q) \Rightarrow r) \Rightarrow ((p \Rightarrow r) \vee (q \Rightarrow r))$