CSC 503 Homework Assignment 2

Out: August 26, 2015
Due: September 2, 2015
MISSING-ID

Prove the validity of the following sequents. Use only the basic rules of natural deduction (no derived rules).

1. [10 points] $p \rightarrow (q \rightarrow r), p \rightarrow q \vdash p \rightarrow r$

2. [20 points] $(p \vee (q \rightarrow p)) \wedge q \vdash p \vee r$

3. [30 points] $(p \wedge q) \rightarrow r, r \rightarrow s, q \wedge \neg s \vdash \neg p$

4. [40 points] $(q \wedge u) \rightarrow t, r \wedge \neg s, r \wedge \neg(s \vee q) \rightarrow p \vdash (u \wedge \neg t) \rightarrow p$