

Proof Theory Seminar

Assignment 5

Instructor: Deepak Garg
TA: Beta Ziliani

Out: July 13, 2012
Due: July 19, 2012

Provide sequent calculus proofs of the following intuitionistic linear logic sequents. If there is no proof, simply say “no proof”. p, q, r are atomic formulas.

1. $\cdot \Rightarrow ((p \otimes q) \multimap r) \multimap (p \multimap (q \multimap r))$
2. $\cdot; (p \oplus q) \otimes r \Rightarrow (p \otimes r) \oplus (q \otimes r)$
3. $\cdot; (p \& q) \otimes r \Rightarrow (p \otimes r) \& (q \otimes r)$
4. $\cdot; p, p \multimap !q, q \multimap (q \multimap p) \Rightarrow p$
5. $\cdot; p \& q, q \& r \Rightarrow p \& r$