

**Exercises 5 — Applied Logic**

1. Decide whether the formula  $((P \supset Q) \supset P) \supset P$  is provable in intuitionistic propositional logic. Use the system of Dyckhoff (Journal of Symbolic Logic 1992).
  2. Let  $A = (\forall x)(P(x) \supset (\exists y)R(x, y))$  where  $P$  and  $R$  are predicate symbols. Prove that this formula implies its own Gödel-Gentzen negative translation in intuitionistic logic.
  3. Problem 5.4.5 in Gallier (2003)
  4. Problem 5.4.7 in Gallier (2003)
  5. Problem 5.5.1 in Gallier (2003)
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