Exercise 1 (Combinators for Shorter Proofs)

We have introduced the combinators B and C to obtain shorter CL-translations of λ-terms. What axioms do these correspond to in the Hilbert system?

Exercise 2 (Proof Translation)

Recall our proof of

$$((((P \to Q) \to P) \to P) \to Q) \to Q$$

in intuitionistic logic. Translate the proof to the Hilbert system using the axioms from the last exercise (in addition to the ones known from the lecture).

Exercise 3 (Proof in the Hilbert System)

Prove in the Hilbert System:

$$(P \to Q) \to (R \to P) \to R \to Q$$