

Homework 1, due Monday 7 February

Some of the schemes below are intuitionistically valid. Give informal proofs of the intuitionistically valid schemes and explain shortly why you think the others are not valid.

1. $\neg\neg(\phi \wedge \psi) \leftrightarrow \neg\neg\phi \wedge \neg\neg\psi$ [4pts]
2. $(\phi \rightarrow \chi) \wedge (\psi \rightarrow \chi) \leftrightarrow (\phi \vee \psi \rightarrow \chi)$ [4pts]
3. $\phi \vee \psi \rightarrow \neg(\neg\phi \wedge \neg\psi)$ [2pts]
4. $\neg(\neg\phi \wedge \neg\psi) \rightarrow \phi \vee \psi$ [2pts]
5. $\neg(\neg\phi \vee \neg\psi) \rightarrow \phi \wedge \psi$ [2pts]
6. $(\neg\phi \rightarrow \phi) \leftrightarrow \neg\neg\phi$ [4pts]