

Metamathematics I
Problem Set 3

Due Monday October 1

- 1) Show that $\phi \vdash \neg\neg\phi$ is derivable.
- 2) Show that the following version of the contraposition inference rule is derivable.

$$\frac{\Gamma, \neg\phi \vdash \psi}{\Gamma, \neg\psi \vdash \phi}$$

- 3) Show that the following inference rule is derivable.

$$\frac{\Gamma \vdash \forall x\phi}{\Gamma \vdash \phi}$$