

Summary of Natural Deduction (\vdash_{ND}) for Predicate Logic CS 745 Fall 2004

These rules are in addition to the rules already given for propositional logic.

	INTRODUCTION	ELIMINATION
\forall	$\frac{\left[\begin{array}{c} x_g \\ \vdots \\ P[x_g/x] \end{array} \right]}{\forall x \bullet P} \forall\text{-I}$	$\frac{\forall x \bullet P}{P[t/x]} \forall\text{-E}$
\exists	$\frac{P[t/x]}{\exists x \bullet P} \exists\text{-I}$	$\frac{\begin{array}{c} \exists x \bullet P \\ \left[\begin{array}{c} x_u \quad P[x_u/x] \quad \text{assumption} \\ \vdots \\ Q \end{array} \right] }{Q} \exists\text{-E}$ <p>x_u does not appear in Q.</p>