

Propositional Logic Rules	Coq tactic(s), commands, rules, etc.
$\wedge\text{-e1}$	destruct
$\wedge\text{-e2}$	destruct
$\wedge\text{-i}$	split
$\vee\text{-e}$	destruct
$\vee\text{-i1}$	left
$\vee\text{-i2}$	right
$\rightarrow\text{-i}$	intro / intros
$\rightarrow\text{-e}$	apply
$\_ \_i$ followed by $\_ \_e$	contradiction
$p \vee \sim p$ (law of excluded middle)	generalize (classic p); intro.
$\sim\sim p \mid\mid p$ (double negation elimination)	apply NNPP.
$\_ \_ \mid\mid p$ (bottom elimination)	elimtype False.
make-box	assert
Simple automatic uses of some of above	trivial, auto
Inductive Definitions and Proofs	
Make a standard (non-recursive) definition	Definition
Make an inductive/recursive definition	Inductive (for sets) or Fixpoint (for functions)
Take cases	destruct
Do proof by induction	induction
Equivalence of $(P = Q)$ and $(P \leftrightarrow Q)$	apply prop_ext
To go from $p \rightarrow q$ to $p \mid\mid q$ (reverse $\rightarrow\text{-i}$ )	revert
Predicate (first-order) logic	
$=\text{-i}$ (equality introduction)	reflexivity
$=\text{-e}$ (equality elimination)	rewrite (from left to right) rewrite $\leftarrow$ (built in shortcut for from right to left) subst, congruence (powerful auto-rewrite tactics!)
$\forall\text{-i}$	intro / intros
$\forall\text{-e}$	apply (sometimes “generalize” is useful too)
$\exists\text{-i}$	exists
$\exists\text{-e}$	destruct