Premise	Conclusion	Name
$G \in \mathcal{F}$	$\mathcal{F} \vdash G$	Assumption
$\mathcal{F} \vdash G$ and $\mathcal{F} \subset \mathcal{F}'$	$\mathcal{F}' \subset G$	Monotonicity
$\mathcal{F} \vdash G$	$\mathcal{F} \vdash \neg\neg G$	Double negation
$\mathcal{F} \vdash F$, $\mathcal{F} \vdash G$	$\mathcal{F} \vdash (F \wedge G)$	$\wedge$-introduction
$\mathcal{F} \vdash (F \wedge G)$	$\mathcal{F} \vdash F$	$\wedge$-elimination
$\mathcal{F} \vdash (F \wedge G)$	$\mathcal{F} \vdash (G \wedge F)$	$\wedge$-symmetry
$\mathcal{F} \vdash F$	$\mathcal{F} \vdash (F \vee G)$	$\vee$-introduction
$\mathcal{F} \vdash (F \vee G)$, $\mathcal{F} \cup \{F\} \vdash H, \mathcal{F} \cup \{G\} \vdash H$	$\mathcal{F} \vdash H$	$\vee$-elimination
$\mathcal{F} \vdash (F \vee G)$	$\mathcal{F} \vdash (G \vee F)$	$\vee$-symmetry
$\mathcal{F} \cup \{F\} \vdash G$	$\mathcal{F} \vdash F \rightarrow G$	$\rightarrow$-introduction
$\mathcal{F} \vdash (F \rightarrow G), \mathcal{F} \vdash F$	$\mathcal{F} \vdash G$	$\rightarrow$-elimination
$\mathcal{F} \vdash F$	$\mathcal{F} \vdash (F)$	$(,)$-introduction
$\mathcal{F} \vdash (F)$	$\mathcal{F} \vdash F$	$(,)$-elimination
$\mathcal{F} \vdash ((F \wedge G) \wedge H)$	$\mathcal{F} \vdash (F \wedge G \wedge H)$	$\wedge$-parentheses rule
$\mathcal{F} \vdash ((F \vee G) \vee H)$	$\mathcal{F} \vdash (F \vee G \vee H)$	$\vee$-parentheses rule

Figure 1: Table 1.5 – proof system for propositional logic

Rule	Name
$\mathcal{F} \vdash (F \vee G)$ if and only if $\mathcal{F} \vdash \neg(\neg F \wedge \neg G)$	$\vee$-definition
$\mathcal{F} \vdash (F \rightarrow G)$ if and only if $\mathcal{F} \vdash (\neg F \vee G)$	$\rightarrow$-definition
$\mathcal{F} \vdash (F \leftrightarrow G)$ if and only if both $\mathcal{F} \vdash (F \rightarrow G)$ and $\mathcal{F} \vdash (G \rightarrow F)$	$\leftrightarrow$-definition

Figure 2: Table 1.6 – proof system for propositional logic

Premise	Conclusion	Name	Source
$\mathcal{F} \vdash (\neg F \vee G), \mathcal{F} \vdash F$	$\mathcal{F} \vdash G$	$\vee$-modus ponens	pg. 16 in text
$\mathcal{F} \vdash (F \vee G), \mathcal{F} \vdash \neg F$	$\mathcal{F} \vdash G$	2nd $\vee$-modus ponens	20 Feb 2018 class
none	$\mathcal{F} \vdash (\neg G \vee G)$	Tautology rule	Example 1.32
$\mathcal{F} \vdash (F \wedge \neg F)$	$\mathcal{F} \vdash G$	Contradiction rule	Example 1.33
$\mathcal{F} \cup \{F\} \vdash G$	$\mathcal{F} \cup \{\neg G\} \vdash \neg F$	Contrapositive	Example 1.34
$\mathcal{F} \cup \{F\} \vdash G, \mathcal{F} \cup \{\neg F\} \vdash G$	$\mathcal{F} \vdash G$	Proof by cases	Example 1.35
$\mathcal{F} \cup \{F\} \vdash G, \mathcal{F} \cup \{F\} \vdash \neg G$	$\mathcal{F} \vdash \neg F$	Proof by contradiction	Example 1.36
$\mathcal{F} \vdash \neg(F \vee G)$	$\mathcal{F} \vdash \neg F \wedge \neg G$	deMorgan	Proposition 1.44
$\mathcal{F} \vdash \neg F \wedge \neg G$	$\mathcal{F} \vdash \neg(F \vee G)$	deMorgan	Proposition 1.44
$\mathcal{F} \vdash \neg(F \wedge G)$	$\mathcal{F} \vdash \neg F \vee \neg G$	deMorgan	Proposition 1.44
$\mathcal{F} \vdash \neg F \vee \neg G$	$\mathcal{F} \vdash \neg(F \wedge G)$	deMorgan	Proposition 1.44
$\mathcal{F} \vdash F \wedge (G \vee H)$	$\mathcal{F} \vdash ((F \wedge G) \vee (F \wedge H))$	$\wedge$-distributivity	Proposition 1.45
$\mathcal{F} \vdash ((F \wedge G) \vee (F \wedge H))$	$\mathcal{F} \vdash F \wedge (G \vee H)$	$\wedge$-distributivity	Proposition 1.45
$\mathcal{F} \vdash (F \vee (G \wedge H))$	$\mathcal{F} \vdash ((F \vee G) \wedge (F \vee H))$	$\vee$-distributivity	Proposition 1.46
$\mathcal{F} \vdash ((F \vee G) \wedge (F \vee H))$	$\mathcal{F} \vdash (F \vee (G \wedge H))$	$\vee$-distributivity	Proposition 1.46

Figure 3: Further rules derived for propositional logic