Logiweb codex of propositional calculus

Up Help

propositional calculus, $\mathrm{T}_{\mathrm{Prop}}$, A1, A2, A3, A4, A5, MP, Gen, Mendelson **1.8**, Mendelson **1.10**a, Mendelson **1.10**b, Mendelson **1.11**a, $* \Rightarrow *$,

propositional calculus

[propositional calculus $\overset{\mathrm{prio}}{\longrightarrow}$
Preassociative
[propositional calculus], [base], [bracket $*$ end bracket],
[big bracket $*$ end bracket], [math $*$ end math], [**flush left** $[*]$], [x], [y], [z],
$[[* \bowtie *]]$, $[[* \overset{*}{\longrightarrow} *]]$, [pyk], [tex], [name], [prio], $[*]$, $[\mathsf{T}]$, $[\mathrm{if}(*,*,*)]$, $[[* \overset{*}{\Rightarrow} *]]$, [val],
[claim], $[\bot]$, $[\mathrm{f}(*)]$, $[(*)^{\mathrm{I}}]$, $[\mathsf{F}]$, [0], [1], [2], [3], [4], [5], [6], [7], [8], [9], [0], [1], [2], [3], [4],
[5], [6], [7], [8], [9], [a], [b], [c], [d], [e], [f], [g], [h], [i], [j], [k], [l], [m], [n], [o], [p], [q], [r],
[s], [t], [u], [v], [w], $[(*)^{\mathrm{M}}]$, $[\mathrm{If}(*,*,*)]$, [array$\{*\}$ $*$ end array], [l], [c], [r], [empty],
$[\langle * \mid * := * \rangle]$, $[\mathcal{M}(*)]$, $[\tilde{\mathcal{U}}(*)]$, $[\mathcal{U}(*)]$, $[\mathcal{U}^{\mathrm{M}}(*)]$, $[\mathbf{apply}(*,*)]$, $[\mathbf{apply}_1(*,*)]$,
[identifier$(*)$], [identifier$_1(*,*)$], [array-plus$(*,*)$], [array-remove$(*,*,*)$], [array-put$(*,*,*,*)$], [array-add$(*,*,*,*,*,*)$], [bit$(*,*)$], [bit$_1(*,*)$], [rack], ["vector"],
["bibliography"], ["dictionary"], ["body"], ["codex"], ["expansion"], ["code"],
["cache"], ["diagnose"], ["pyk"], ["tex"], ["texname"], ["value"], ["message"],
["macro"], ["definition"], ["unpack"], ["claim"], ["priority"], ["lambda"],
["apply"], ["true"], ["if"], ["quote"], ["proclaim"], ["define"], ["introduce"],
["hide"], ["pre"], ["post"], $[\mathcal{E}(*,*,*)]$, $[\mathcal{E}_2(*,*,*,*,*)]$, $[\mathcal{E}_3(*,*,*,*)]$,
$[\mathcal{E}_4(*,*,*,*)]$, $[\mathbf{lookup}(*,*,*)]$, $[\mathbf{abstract}(*,*,*,*)]$, $[\lceil * \rceil]$, $[\mathcal{M}(*,*,*)]$,
$[\mathcal{M}_2(*,*,*,*)]$, $[\mathcal{M}^*(*,*,*)]$, [macro], [s$_0$], $[\mathbf{zip}(*,*)]$, $[\mathbf{assoc}_1(*,*,*)]$, $[(*)^{\mathbf{p}}]$,
[self], $[[* \doteqdot *]]$, $[[* \doteq *]]$, $[[* \doteq *]]$, $[[* \overset{\mathrm{pyk}}{=} *]]$, $[[* \overset{\mathrm{tex}}{=} *]]$, $[[* \overset{\mathrm{name}}{=} *]]$,
$[\mathbf{Priority\ table}[*]]$, $[\tilde{\mathcal{M}}_1]$, $[\tilde{\mathcal{M}}_2(*)]$, $[\tilde{\mathcal{M}}_3(*)]$, $[\tilde{\mathcal{M}}_4(*,*,*,*)]$, $[\tilde{\mathcal{M}}(*,*,*)]$,
$[\tilde{\mathcal{Q}}(*,*,*)]$, $[\tilde{\mathcal{Q}}_2(*,*,*)]$, $[\tilde{\mathcal{Q}}_3(*,*,*,*)]$, $[\tilde{\mathcal{Q}}^*(*,*,*)]$, $[(*)]$, $[\mathbf{aspect}(*,*)]$,
$[\mathbf{aspect}(*,*,*)]$, $[\langle * \rangle]$, $[\mathbf{tuple}_1(*)]$, $[\mathbf{tuple}_2(*)]$, $[\mathrm{let}_2(*,*)]$, $[\mathrm{let}_1(*,*)]$,
$[[* \overset{\mathrm{claim}}{=} *]]$, [checker], $[\mathbf{check}(*,*)]$, $[\mathbf{check}_2(*,*,*)]$, $[\mathbf{check}_3(*,*,*)]$,
$[\mathbf{check}^*(*,*)]$, $[\mathbf{check}^*_2(*,*,*)]$, $[[*]^{\cdot}]$, $[[*]^{-}]$, $[[*]^{\circ}]$, [msg], $[[* \overset{\mathrm{msg}}{=} *]]$, [<stmt>],
[stmt], $[[* \overset{\mathrm{stmt}}{=} *]]$, [HeadNil$'$], [HeadPair$'$], [Transitivity$'$], $[\perp\!\!\!\perp]$, [Contra$'$], [T'_{E}],
[L_1], [$\underline{*}$], $[\mathcal{A}]$, $[\mathcal{B}]$, $[\mathcal{C}]$, $[\mathcal{D}]$, $[\mathcal{E}]$, $[\mathcal{F}]$, $[\mathcal{G}]$, $[\mathcal{H}]$, $[\mathcal{I}]$, $[\mathcal{J}]$, $[\mathcal{K}]$, $[\mathcal{L}]$, $[\mathcal{M}]$, $[\mathcal{N}]$, $[\mathcal{O}]$, $[\mathcal{P}]$, $[\mathcal{Q}]$,
$[\mathcal{R}]$, $[\mathcal{S}]$, $[\mathcal{T}]$, $[\mathcal{U}]$, $[\mathcal{V}]$, $[\mathcal{W}]$, $[\mathcal{X}]$, $[\mathcal{Y}]$, $[\mathcal{Z}]$, $[\langle * \mid * := * \rangle]$, $[\langle {}^{*} * \mid * := * \rangle]$, $[\emptyset]$, [Remainder],
$[(*)^{\mathbf{v}}]$, $[\mathrm{error}(*,*)]$, $[\mathrm{error}_2(*,*)]$, $[\mathrm{proof}(*,*,*)]$, $[\mathrm{proof}_2(*,*)]$, $[\mathcal{S}(*,*)]$, $[\mathcal{S}^{\mathrm{I}}(*,*)]$,
$[\mathcal{S}^{\triangleright}(*,*)]$, $[\mathcal{S}^{\triangleright}_1(*,*,*)]$, $[\mathcal{S}^{\mathrm{E}}(*,*)]$, $[\mathcal{S}^{\mathrm{E}}_1(*,*,*)]$, $[\mathcal{S}^{+}(*,*)]$, $[\mathcal{S}^{+}_1(*,*,*)]$,
$[\mathcal{S}^{-}(*,*)]$, $[\mathcal{S}^{-}_1(*,*,*)]$, $[\mathcal{S}^{*}(*,*)]$, $[\mathcal{S}^{*}_1(*,*,*)]$, $[\mathcal{S}^{*}_2(*,*,*,*)]$, $[\mathcal{S}^{@}(*,*)]$,
$[\mathcal{S}^{@}_1(*,*,*)]$, $[\mathcal{S}^{\vdash}(*,*)]$, $[\mathcal{S}^{\vdash}_1(*,*,*,*)]$, $[\mathcal{S}^{\Vdash}(*,*)]$, $[\mathcal{S}^{\Vdash}_1(*,*,*,*)]$, $[\mathcal{S}^{\mathrm{i.e.}\cdot}(*,*)]$,
$[\mathcal{S}^{\mathrm{i.e.}\cdot}_1(*,*,*,*)]$, $[\mathcal{S}^{\mathrm{i.e.}\cdot}_2(*,*,*,*,*)]$, $[\mathcal{S}^{\forall}(*,*)]$, $[\mathcal{S}^{\forall}_1(*,*,*,*)]$, $[\mathcal{S}^{:}(*,*)]$,

$[\mathcal{S}_1^i(*,*,*)]$, $[\mathcal{S}_2^i(*,*,*,*)]$, $[\mathcal{T}(*)]$, [claims$(*,*,*)$], [claims$_2(*,*,*)$], [<proof>], [proof], [[**Lemma** $*$: $*$]], [[**Proof of** $*$: $*$]], [[$*$ **lemma** $*$: $*$]], [[$*$ **antilemma** $*$: $*$]], [[$*$ **rule** $*$: $*$]], [[$*$ **antirule** $*$: $*$]], [verifier], $[\mathcal{V}_1(*)]$, $[\mathcal{V}_2(*,*)]$, $[\mathcal{V}_3(*,*,*,*)]$, $[\mathcal{V}_4(*,*)]$, $[\mathcal{V}_5(*,*,*,*)]$, $[\mathcal{V}_6(*,*,*,*)]$, $[\mathcal{V}_7(*,*,*,*)]$, [Cut$(*,*)$], [Head$_\oplus(*)$], [Tail$_\oplus(*)$], [rule$_1(*,*)$], [rule$(*,*)$], [Rule tactic], [Plus$(*,*)$], [[**Theory** $*$]], [theory$_2(*,*)$], [theory$_3(*,*)$], [theory$_4(*,*,*)$], [HeadNil$''$], [HeadPair$''$], [Transitivity$''$], [Contra$''$], [HeadNil], [HeadPair], [Transitivity], [Contra], [T$_\mathrm{E}$], [ragged right], [ragged right expansion], [color$(*:*)$], [color$^*(*:*)$], [vars$(*)$], [vars$^*(*)$], [instantiate$(*+*:*)$], [instantiate$^*(*+*:*)$], [unify$(*:*=*:*+*)$], [unify$^*(*:*=*:*+*)$], [unify$_1(*:*=*:*+*)$], [unify$_2(*+*)$], [unify$_3(*=*+*)$], [check], [parm$(*,*,*)$], [parm$^*(*,*,*)$], [inst$(*,*)$], [inst$^*(*,*)$], [occur$(*,*)$], [occur$^*(*,*)$], [circular$(*=*,*)$], [circular$^*(*=*,*)$], [unify$(*=*,*)$], [unify$^*(*=*,*)$], [unify$_2(*=*,*)$], [L$_\mathrm{a}$], [L$_\mathrm{b}$], [L$_\mathrm{c}$], [L$_\mathrm{d}$], [L$_\mathrm{e}$], [L$_\mathrm{f}$], [L$_\mathrm{g}$], [L$_\mathrm{h}$], [L$_\mathrm{i}$], [L$_\mathrm{j}$], [L$_\mathrm{k}$], [L$_\mathrm{l}$], [L$_\mathrm{m}$], [L$_\mathrm{n}$], [L$_\mathrm{o}$], [L$_\mathrm{p}$], [L$_\mathrm{q}$], [L$_\mathrm{r}$], [L$_\mathrm{s}$], [L$_\mathrm{t}$], [L$_\mathrm{u}$], [L$_\mathrm{v}$], [L$_\mathrm{w}$], [L$_\mathrm{x}$], [L$_\mathrm{y}$], [L$_\mathrm{z}$], [L$_\mathrm{A}$], [L$_\mathrm{B}$], [L$_\mathrm{C}$], [L$_\mathrm{D}$], [L$_\mathrm{E}$], [L$_\mathrm{F}$], [L$_\mathrm{G}$], [L$_\mathrm{H}$], [L$_\mathrm{I}$], [L$_\mathrm{J}$], [L$_\mathrm{K}$], [L$_\mathrm{L}$], [L$_\mathrm{M}$], [L$_\mathrm{N}$], [L$_\mathrm{O}$], [L$_\mathrm{P}$], [L$_\mathrm{Q}$], [L$_\mathrm{R}$], [L$_\mathrm{S}$], [L$_\mathrm{T}$], [L$_\mathrm{U}$], [L$_\mathrm{V}$], [L$_\mathrm{W}$], [L$_\mathrm{X}$], [L$_\mathrm{Y}$], [L$_\mathrm{Z}$], [L$_?$], [Reflexivity], [Reflexivity$_1$], [Commutativity], [<tactic>], [tactic], $[[* \overset{\text{tactic}}{=} *]]$, $[\mathcal{P}(*,*,*)]$, $[\mathcal{P}^*(*,*,*)]$, [p$_0$], [conclude$_1(*,*)$], [conclude$_2(*,*,*)$], [conclude$_3(*,*,*,*)$], [T$_\mathrm{Prop}$], [A1], [A2], [A3], [A4], [A5], [MP], [Gen], [Mendelson **1.8**], [Mendelson **1.10**a], [Mendelson **1.10**b], [Mendelson **1.11**a], [nani teta saka...:13];

Preassociative

[$*$_{$*$}], [$*'$], [$*[\ *\ ]$], [$*[*\to*]$], [$*[*\Rightarrow*]$];

Preassociative

[“ $*$ ”], [], [$(*)^{\mathbf{t}}$], [string$(*)$ + $*$], [string$(*)$ ++ $*$], [$*$], [$*$], [!$*$], [”$*$], [#$*$], [$$$*$], [%$*$], [&$*$], [’$*$], [($*$], [)$*$], [**$*$], [+$*$], [,$*$], [-$*$], [.$*$], [/$*$], [0$*$], [1$*$], [2$*$], [3$*$], [4$*$], [5$*$], [6$*$], [7$*$], [8$*$], [9$*$], [:$*$], [;$*$], [<$*$], [=$*$], [>$*$], [?$*$], [@$*$], [A$*$], [B$*$], [C$*$], [D$*$], [E$*$], [F$*$], [G$*$], [H$*$], [I$*$], [J$*$], [K$*$], [L$*$], [M$*$], [N$*$], [O$*$], [P$*$], [Q$*$], [R$*$], [S$*$], [T$*$], [U$*$], [V$*$], [W$*$], [X$*$], [Y$*$], [Z$*$], [[$*$], [\$*$], []$*$], [^$*$], [_$*$], [‘$*$], [a$*$], [b$*$], [c$*$], [d$*$], [e$*$], [f$*$], [g$*$], [h$*$], [i$*$], [j$*$], [k$*$], [l$*$], [m$*$], [n$*$], [o$*$], [p$*$], [q$*$], [r$*$], [s$*$], [t$*$], [u$*$], [v$*$], [w$*$], [x$*$], [y$*$], [z$*$], [{$*$], [|$*$], [}$*$], [~$*$], [**Preassociative** $*$; $*$], [**Postassociative** $*$; $*$], [[$*$], $*$], [priority $*$ end], [newline $*$], [macro newline $*$];

Preassociative

[$*$0], [$*$1], [0b], [$*$-color$(*)$], [$*$-color$^*(*)$];

Preassociative

[$*$ ’ $*$], [$*$ ‘ $*$];

Preassociative

[$*^{\mathrm{H}}$], [$*^{\mathrm{T}}$], [$*^{\mathrm{U}}$], [$*^{\mathrm{h}}$], [$*^{\mathrm{t}}$], [$*^{\mathrm{s}}$], [$*^{\mathrm{c}}$], [$*^{\mathrm{d}}$], [$*^{\mathrm{a}}$], [$*^{\mathrm{C}}$], [$*^{\mathrm{M}}$], [$*^{\mathrm{B}}$], [$*^{\mathrm{r}}$], [$*^{\mathrm{i}}$], [$*^{\mathrm{d}}$], [$*^{\mathrm{R}}$], [$*^0$], [$*^1$], [$*^2$], [$*^3$], [$*^4$], [$*^5$], [$*^6$], [$*^7$], [$*^8$], [$*^9$], [$*^{\mathrm{E}}$], [$*^{\mathcal{V}}$], [$*^{\mathcal{C}}$], [$*^{\mathcal{C}^*}$];

Preassociative

[$*\cdot*$], [$*\cdot_0*$];

Preassociative

[$*+*$], [$*+_0*$], [$*+_1*$], [$*-*$], [$*-_0*$], [$*-_1*$];

Preassociative
$[* \cup \{*\}], [* \cup *], [*\backslash\{*\}];$
Postassociative
$[* \mathbin{\therefore} *], [* \mathbin{\underline{\therefore}} *], [* \mathbin{\underline{::}} *], [* \mathbin{\underline{+2*}} *], [* :: *], [* +2* *];$
Postassociative
$[*, *];$
Preassociative
$[* \overset{\mathrm{B}}{\approx} *], [* \overset{\mathrm{D}}{\approx} *], [* \overset{\mathrm{C}}{\approx} *], [* \overset{\mathrm{P}}{\approx} *], [* \approx *], [* = *], [* \overset{+}{\to} *], [* \overset{\mathrm{t}}{=} *], [* \overset{\mathrm{t}^*}{=} *], [* \overset{\mathrm{r}}{=} *],$
$[* \in_{\mathrm{t}} *], [* \subseteq_{\mathrm{T}} *], [* \overset{\mathrm{T}}{=} *], [* \overset{\mathrm{s}}{=} *], [* \text{ free in } *], [* \text{ free in}^* * *], [* \text{ free for } * \text{ in } *],$
$[* \text{ free for}^* * \text{ in } *], [* \in_{\mathrm{c}} *], [* < *], [* <' *], [* \leq' *];$
Preassociative
$[\neg *];$
Preassociative
$[* \wedge *], [* \ddot{\wedge} *], [* \tilde{\wedge} *], [* \wedge_{\mathrm{c}} *];$
Preassociative
$[* \vee *], [* \parallel *], [* \ddot{\vee} *];$
Postassociative
$[* \ddot{\Rightarrow} *];$
Postassociative
$[* : *], [*!*];$
Postassociative
$[* \Rightarrow *];$
Preassociative
$[* \begin{cases} * \\ * \end{cases}];$
Preassociative
$[\lambda * .*], [\Lambda *], [\textbf{if } * \textbf{ then } * \textbf{ else } *], [\textbf{let } * = * \textbf{ in } *], [\textbf{let } * \ddot{=} * \text{ in } *];$
Preassociative
$[*^{\mathrm{I}}], [*^{\triangleright}], [*^{\mathrm{V}}], [*^{+}], [*^{-}], [*^{*}];$
Preassociative
$[* @ *], [* \triangleright *], [* \Rrightarrow *], [* \gg *];$
Postassociative
$[* \vdash *], [* \Vdash *], [* \text{ i.e. } *];$
Preassociative
$[\forall *: *];$
Postassociative
$[* \oplus *];$
Postassociative
$[*; *];$
Preassociative
$[* \text{ proves } *];$
Preassociative
$[* \textbf{ proof of } * : *], [\text{Line } * : * \gg *; *], [\text{Last line } * \gg *], [\text{Line } * : \text{Premise} \gg *; *],$
$[\text{Line } * : \text{Side-condition} \gg *; *], [\text{Arbitrary} \gg *; *], [\text{Local} \gg * = *; *];$
Postassociative

[∗ then ∗], [∗[∗]∗];
Preassociative
[∗&∗];
Preassociative
[∗\\∗];]

[propositional calculus $\overset{\text{pyk}}{\to}$ “propositional calculus”]

$\mathrm{T}_{\mathrm{Prop}}$

[$\mathrm{T}_{\mathrm{Prop}} \overset{\text{stmt}}{\to}$ [∀a: ∀b: [a ⊢ [[a ⇒ b] ⊢ b]]] ⊕ [[∀a: ∀b: ∀c: [[a ⇒ [b ⇒ c]] ⇒ [[a ⇒ b] ⇒ [a ⇒ c]]]] ⊕ [[∀a: ∀b: ∀c: [[c free for b in a] ⊩ ∀b: [a ⇒ ⟨a |b:= c⟩]]] ⊕ [[∀a: ∀b: ∀c: [[¬ [c free in a]] ⊩ [[∀c: [a ⇒ b]] ⇒ [a ⇒ ∀c: b]]]] ⊕ [[∀a: ∀b: [a ⇒ [b ⇒ a]]] ⊕ [[∀a: ∀b: [[[¬a] ⇒ ¬b] ⇒ [[[¬a] ⇒ b] ⇒ a]]] ⊕ ∀a: ∀b: [a ⊢ ∀b: a]]]]]]

[$\mathrm{T}_{\mathrm{Prop}} \overset{\text{tex}}{\to}$ “
T_{Prop}”]

[$\mathrm{T}_{\mathrm{Prop}} \overset{\text{pyk}}{\to}$ “propositional theory”]

A1

[A1 $\overset{\text{proof}}{\to}$ Rule tactic]

[A1 $\overset{\text{stmt}}{\to}$ $\mathrm{T}_{\mathrm{Prop}}$ ⊢ ∀a: ∀b: [a ⇒ [b ⇒ a]]]

[A1 $\overset{\text{tex}}{\to}$ “A1”]

[A1 $\overset{\text{pyk}}{\to}$ “axiom one”]

A2

[A2 $\overset{\text{proof}}{\to}$ Rule tactic]

[A2 $\overset{\text{stmt}}{\to}$ $\mathrm{T}_{\mathrm{Prop}}$ ⊢ ∀a: ∀b: ∀c: [[a ⇒ [b ⇒ c]] ⇒ [[a ⇒ b] ⇒ [a ⇒ c]]]]

[A2 $\overset{\text{tex}}{\to}$ “A2”]

[A2 $\overset{\text{pyk}}{\to}$ “axiom two”]

A3

[A3 $\overset{\text{proof}}{\to}$ Rule tactic]

[A3 $\overset{\text{stmt}}{\to}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon [\ [\ [\ \neg \underline{\mathsf{a}}\ ]\ \Rightarrow \neg \underline{\mathsf{b}}\ ]\ \Rightarrow\ [\ [\ [\ \neg \underline{\mathsf{a}}\ ]\ \Rightarrow \underline{\mathsf{b}}\ ]\ \Rightarrow \underline{\mathsf{a}}\ ]\ ]$]

[A3 $\overset{\text{tex}}{\to}$ “A3”]

[A3 $\overset{\text{pyk}}{\to}$ “axiom three”]

A4

[A4 $\overset{\text{proof}}{\to}$ Rule tactic]

[A4 $\overset{\text{stmt}}{\to}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \forall \underline{\mathsf{c}}\colon [\ [\ \underline{\mathsf{c}}$ free for $\underline{\mathsf{b}}$ in $\underline{\mathsf{a}}\ ] \Vdash \forall \underline{\mathsf{b}}\colon [\ \underline{\mathsf{a}} \Rightarrow \langle \underline{\mathsf{a}}\, |\underline{\mathsf{b}} := \underline{\mathsf{c}} \rangle\ ]\ ]\ ]$]

[A4 $\overset{\text{tex}}{\to}$ “A4”]

[A4 $\overset{\text{pyk}}{\to}$ “axiom four”]

A5

[A5 $\overset{\text{proof}}{\to}$ Rule tactic]

[A5 $\overset{\text{stmt}}{\to}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \forall \underline{\mathsf{c}}\colon [\ [\ \neg\ [\ \underline{\mathsf{c}}$ free in $\underline{\mathsf{a}}\ ]\ ] \Vdash\ [\ [\ \forall \underline{\mathsf{c}}\colon [\ \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}}\ ]\ ]\ \Rightarrow\ [\ \underline{\mathsf{a}} \Rightarrow \forall \underline{\mathsf{c}}\colon \underline{\mathsf{b}}\ ]\ ]\ ]$]

[A5 $\overset{\text{tex}}{\to}$ “A5”]

[A5 $\overset{\text{pyk}}{\to}$ “axiom five”]

MP

[MP $\overset{\text{proof}}{\to}$ Rule tactic]

[MP $\overset{\text{stmt}}{\to}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon [\ \underline{\mathsf{a}} \vdash\ [\ [\ \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}}\ ] \vdash \underline{\mathsf{b}}\ ]\ ]$]

[MP $\overset{\text{tex}}{\to}$ “MP”]

[MP $\overset{\text{pyk}}{\to}$ “axiom mp”]

Gen

[Gen $\overset{\text{proof}}{\to}$ Rule tactic]

[Gen $\overset{\text{stmt}}{\rightarrow}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{a} \colon \forall \underline{b} \colon [\ \underline{a} \vdash \forall \underline{b} \colon \underline{a}\ ]\ ]$

[Gen $\overset{\text{tex}}{\rightarrow}$ “Gen”]

[Gen $\overset{\text{pyk}}{\rightarrow}$ “axiom gen”]

Mendelson **1.8**

[Mendelson **1.8** $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{a} \colon [\ [\ \mathrm{A2} \gg [\ [\ \underline{a} \Rightarrow [\ [\ \underline{a} \Rightarrow \underline{a}\ ]\ \Rightarrow \underline{a}\ ]\ ]\ \Rightarrow [\ [\ \underline{a} \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ ]\ ;\ [\ [\ \mathrm{A1} \gg [\ \underline{a} \Rightarrow [\ [\ \underline{a} \Rightarrow \underline{a}\ ]\ \Rightarrow \underline{a}\ ]\ ]\ ]\ ;\ [\ [\ [\ [\ \mathrm{MP} \rhd [\ \underline{a} \Rightarrow [\ [\ \underline{a} \Rightarrow \underline{a}\ ]\ \Rightarrow \underline{a}\ ]\ ]\ ]\ \rhd [\ [\ \underline{a} \Rightarrow [\ [\ \underline{a} \Rightarrow \underline{a}\ ]\ \Rightarrow \underline{a}\ ]\ ]\ \Rightarrow [\ [\ \underline{a} \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ ]\ \gg [\ [\ \underline{a} \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ ]\ ;\ [\ [\ \mathrm{A1} \gg [\ \underline{a} \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ ]\ ;\ [\ [\ [\ [\ \mathrm{MP} \rhd [\ \underline{a} \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ ]\ \rhd [\ [\ \underline{a} \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ \Rightarrow [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ ]\ \gg [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]\ ]\ ]\ ]\ ]\ \rceil, \mathrm{p}_0, \mathsf{c})]$

[Mendelson **1.8** $\overset{\text{stmt}}{\rightarrow}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{a} \colon [\ \underline{a} \Rightarrow \underline{a}\ ]\ ]$

[Mendelson **1.8** $\overset{\text{tex}}{\rightarrow}$ “Mendelson\ \textbf{1.8}”]

[Mendelson **1.8** $\overset{\text{pyk}}{\rightarrow}$ “mendelson lemma one eight”]

Mendelson **1.10**a

[Mendelson **1.10**a $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{e} \colon \forall \underline{d} \colon \forall \underline{f} \colon [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \vdash [\ [\ \underline{e} \Rightarrow \underline{f}\ ]\ \vdash [\ [\ \mathrm{A2} \gg [\ [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ \Rightarrow [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ]\ ;\ [\ [\ \mathrm{A1} \gg [\ [\ \underline{e} \Rightarrow \underline{f}\ ]\ \Rightarrow [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ ]\ ]\ ;\ [\ [\ [\ [\ \mathrm{MP} \rhd [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ \rhd [\ [\ \underline{e} \Rightarrow \underline{f}\ ]\ \Rightarrow [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ ]\ \gg [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ ]\ ;\ [\ [\ [\ [\ \mathrm{MP} \rhd [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ ]\ \rhd [\ [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ \Rightarrow [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ]\ \gg [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ;\ [\ [\ [\ \mathrm{MP} \rhd [\ \underline{d} \Rightarrow \underline{e}\ ]\ ]\ \rhd [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ \gg [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ]\ ]\ ]\ ]\ \rceil, \mathrm{p}_0, \mathsf{c})]$

[Mendelson **1.10**a $\overset{\text{stmt}}{\rightarrow}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{e} \colon \forall \underline{d} \colon \forall \underline{f} \colon [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \vdash [\ [\ \underline{e} \Rightarrow \underline{f}\ ]\ \vdash [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]$

[Mendelson **1.10**a $\overset{\text{tex}}{\rightarrow}$ “Mendelson\ \textbf{1.10} a”]

[Mendelson **1.10**a $\overset{\text{pyk}}{\rightarrow}$ “mendelson corollary one ten a”]

Mendelson **1.10**b

[Mendelson **1.10**b $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{d} \colon \forall \underline{e} \colon \forall \underline{f} \colon [\ [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ \vdash [\ \underline{e} \vdash [\ [\ \mathrm{A2} \gg [\ [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ \Rightarrow [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ]\ ;\ [\ [\ \mathrm{A1} \gg [\ \underline{e} \Rightarrow [\ \underline{d} \Rightarrow \underline{e}\ ]\ ]\ ]\ ;\ [\ [\ [\ [\ \mathrm{MP} \rhd \underline{e}\ ]\ \rhd [\ \underline{e} \Rightarrow [\ \underline{d} \Rightarrow \underline{e}\ ]\ ]\ ]\ \gg [\ \underline{d} \Rightarrow \underline{e}\ ]\ ]\ ;\ [\ [\ [\ [\ \mathrm{MP} \rhd [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ ]\ \rhd [\ [\ \underline{d} \Rightarrow [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ \Rightarrow [\ [$

$\underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow\ [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ] \gg\ [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow\ [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ;\ [\ [\ [\ \mathrm{MP} \rhd\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ ]\ \rhd\ [\ [\ \underline{d} \Rightarrow \underline{e}\ ]\ \Rightarrow\ [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ \gg\ [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ]\ ]\ ]\ ]\ ], \mathrm{p}_0, \mathsf{c})]$

[Mendelson **1.10**b $\overset{\mathrm{stmt}}{\rightarrow}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{d}\colon \forall \underline{e}\colon \forall \underline{f}\colon\ [\ [\ \underline{d} \Rightarrow\ [\ \underline{e} \Rightarrow \underline{f}\ ]\ ]\ \vdash\ [\ \underline{e} \vdash\ [\ \underline{d} \Rightarrow \underline{f}\ ]\ ]\ ]\ ]$

[Mendelson **1.10**b $\overset{\mathrm{tex}}{\rightarrow}$ “Mendelson\ \textbf{1.10} b”]

[Mendelson **1.10**b $\overset{\mathrm{pyk}}{\rightarrow}$ “mendelson corollary one ten b”]

Mendelson **1.11**a

[Mendelson **1.11**a $\overset{\mathrm{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{g}\colon\ [\ [\ \mathrm{A3} \gg\ [\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg\neg \underline{g}\ ]\ \Rightarrow\ [\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg \underline{g}\ ]\ \Rightarrow \underline{g}\ ]\ ]\ ]\ ;\ [\ [\ \mathrm{Mendelson}\ \mathbf{1.8} \gg\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg \underline{g}\ ]\ ]\ ;\ [\ [\ \mathrm{A1} \gg\ [\ [\ \neg\neg \underline{g}\ ]\ \Rightarrow\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg\neg \underline{g}\ ]\ ]\ ]\ ;\ [\ [\ [\ [\ \mathrm{Mendelson}\ \mathbf{1.10}\mathrm{b} \rhd\ [\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg\neg \underline{g}\ ]\ \Rightarrow\ [\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg \underline{g}\ ]\ \Rightarrow \underline{g}\ ]\ ]\ ]\ \rhd\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg \underline{g}\ ]\ ]\ \gg\ [\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg\neg \underline{g}\ ]\ \Rightarrow \underline{g}\ ]\ ]\ ;\ [\ [\ [\ \mathrm{Mendelson}\ \mathbf{1.10}\mathrm{a} \rhd\ [\ [\ \neg\neg \underline{g}\ ]\ \Rightarrow\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg\neg \underline{g}\ ]\ ]\ ]\ \rhd\ [\ [\ [\ \neg \underline{g}\ ]\ \Rightarrow \neg\neg \underline{g}\ ]\ \Rightarrow \underline{g}\ ]\ ]\ \gg\ [\ [\ \neg\neg \underline{g}\ ]\ \Rightarrow \underline{g}\ ]\ ]\ ]\ ]\ ]\ ]\ ], \mathrm{p}_0, \mathsf{c})]$

[Mendelson **1.11**a $\overset{\mathrm{stmt}}{\rightarrow}$ $\mathrm{T}_{\mathrm{Prop}} \vdash \forall \underline{g}\colon\ [\ [\ \neg\neg \underline{g}\ ]\ \Rightarrow \underline{g}\ ]\ ]$

[Mendelson **1.11**a $\overset{\mathrm{tex}}{\rightarrow}$ “Mendelson\ \textbf{1.11} a”]

[Mendelson **1.11**a $\overset{\mathrm{pyk}}{\rightarrow}$ “mendelson lemma one eleven a”]

$* \Rightarrow *$

$[\mathsf{x} \Rightarrow \mathsf{y} \overset{\mathrm{val}}{\rightarrow}\ [\ \neg \mathsf{x}\ ]\ \vee \mathsf{y}]$

$[\mathsf{x} \Rightarrow \mathsf{y} \overset{\mathrm{tex}}{\rightarrow}$ “#1.
\Rightarrow{}#2.”]

$[\mathsf{x} \Rightarrow \mathsf{y} \overset{\mathrm{pyk}}{\rightarrow}$ “$*$ imply $*$”]

The pyk compiler, version 0.grue.20050502+ by Klaus Grue
GRD-2005-06-02.UTC:18:16:36.700631 = MJD-53523.TAI:18:17:08.700631 = LGT-4624453028700631e-6