[propositional calculus $\stackrel{\text{pyk}}{=}$ "propositional calculus"]

[**Theory** T_{PC}]

[$\mathrm{T}_{\mathrm{PC}} \stackrel{\text{pyk}}{=}$ "propositional theory"]

[$\mathsf{x} \Rightarrow \mathsf{y} \stackrel{\text{pyk}}{=}$ "$*$ imply $*$"]

[$\mathsf{x} \Rightarrow \mathsf{y} \doteq \neg \mathsf{x} \vee \mathsf{y}$]

[$\mathsf{T} \Rightarrow \mathsf{T}]^{\cdot}$

[$\mathsf{T} \Rightarrow \mathsf{F}]^{-}$

[$\mathsf{F} \Rightarrow \mathsf{T}]^{\cdot}$

[$\mathsf{F} \Rightarrow \mathsf{F}]^{\cdot}$

[A1 $\stackrel{\text{pyk}}{=}$ "axiom one"]

[A2 $\stackrel{\text{pyk}}{=}$ "axiom two"]

[A3 $\stackrel{\text{pyk}}{=}$ "axiom three"]

[MP $\stackrel{\text{pyk}}{=}$ "mp"]

[T_{PC} **rule** A1: $\forall \mathcal{B} \colon \forall \mathcal{C} \colon \mathcal{B} \Rightarrow \mathcal{C} \Rightarrow \mathcal{B}$]

[T_{PC} **rule** A2: $\forall \mathcal{B} \colon \forall \mathcal{C} \colon \forall \mathcal{D} \colon (\mathcal{B} \Rightarrow \mathcal{C} \Rightarrow \mathcal{D}) \Rightarrow (\mathcal{B} \Rightarrow \mathcal{C}) \Rightarrow \mathcal{B} \Rightarrow \mathcal{D}$]

[T_{PC} **rule** A3: $\forall \mathcal{B} \colon \forall \mathcal{C} \colon (\neg \mathcal{C} \Rightarrow \neg \mathcal{B}) \Rightarrow (\neg \mathcal{C} \Rightarrow \mathcal{B}) \Rightarrow \mathcal{C}$]

[T_{PC} **rule** MP: $\forall \mathcal{B} \colon \forall \mathcal{C} \colon \mathcal{B} \vdash \mathcal{B} \Rightarrow \mathcal{C} \vdash \mathcal{C}$]

[LEMMA1.8 $\stackrel{\text{pyk}}{=}$ "mendelson lemma one eight"]

[T_{PC} **lemma** LEMMA1.8: $\forall \mathcal{B} \colon \mathcal{B} \Rightarrow \mathcal{B}$]

T_{PC} **proof of** LEMMA1.8:

L01:	Arbitrary $\gg$	$\mathcal{B}$	;
L02:	A2 $\gg$	$(\mathcal{B} \Rightarrow (\mathcal{B} \Rightarrow \mathcal{B}) \Rightarrow \mathcal{B}) \Rightarrow (\mathcal{B} \Rightarrow \mathcal{B} \Rightarrow \mathcal{B}) \Rightarrow \mathcal{B} \Rightarrow \mathcal{B}$	;
L03:	A1 $\gg$	$\mathcal{B} \Rightarrow (\mathcal{B} \Rightarrow \mathcal{B}) \Rightarrow \mathcal{B}$	;
L04:	MP $\rhd$ L03 $\rhd$ L02 $\gg$	$(\mathcal{B} \Rightarrow \mathcal{B} \Rightarrow \mathcal{B}) \Rightarrow \mathcal{B} \Rightarrow \mathcal{B}$	;
L05:	A1 $\gg$	$\mathcal{B} \Rightarrow \mathcal{B} \Rightarrow \mathcal{B}$	;
L06:	MP $\rhd$ L05 $\rhd$ L04 $\gg$	$\mathcal{B} \Rightarrow \mathcal{B}$	$\square$

A TeX definitions

[$\mathrm{T}_{\mathrm{PC}} \stackrel{\text{tex}}{=}$ "T_{PC}"]

[$\mathsf{x} \Rightarrow \mathsf{y} \stackrel{\text{tex}}{=}$ "#1.
\Rightarrow #2."]

[A1 $\stackrel{\text{tex}}{=}$ "A1"]

[A2 $\stackrel{\text{tex}}{=}$ "A2"]

[A3 $\stackrel{\text{tex}}{=}$ "A3"]

[MP $\stackrel{\text{tex}}{=}$ "MP"]

[LEMMA1.8 $\stackrel{\text{tex}}{=}$ "LEMMA 1.8"]