Pyk-definitioner: [propcalc $\overset{\text{pyk}}{=}$ “propcalc”] [$\mathsf{x} \Rightarrow \mathsf{y}$ $\overset{\text{pyk}}{=}$ “$*$ implies $*$”] [A1 $\overset{\text{pyk}}{=}$ “axiom one”] [A2 $\overset{\text{pyk}}{=}$ “axiom two”] [A3 $\overset{\text{pyk}}{=}$ “axiom three”] [MP $\overset{\text{pyk}}{=}$ “rule mp”] [Mendelson1.8 $\overset{\text{pyk}}{=}$ “lemma id”]

[**Theory** propcalc]

Tex-definitioner: [$\neg\mathsf{x}$ $\overset{\text{tex}}{=}$ “\neg #1.”] [$\mathsf{x} \Rightarrow \mathsf{y}$ $\overset{\text{tex}}{=}$ “#1. \Rightarrow{} #2.”] [A1 $\overset{\text{tex}}{=}$ “A1”] [A2 $\overset{\text{tex}}{=}$ “A2”] [A3 $\overset{\text{tex}}{=}$ “A3”] [MP $\overset{\text{tex}}{=}$ “MP”] [Mendelson1.8 $\overset{\text{tex}}{=}$ “Mendelson 1.8”]

[propcalc **rule** A1: $\forall\mathcal{A}\colon\forall\mathcal{B}\colon \mathcal{A} \Rightarrow \mathcal{B} \Rightarrow \mathcal{A}$]

[propcalc **rule** A2: $\forall\mathcal{A}\colon\forall\mathcal{B}\colon\forall\mathcal{C}\colon (\mathcal{A} \Rightarrow \mathcal{B} \Rightarrow \mathcal{C}) \Rightarrow (\mathcal{A} \Rightarrow \mathcal{B}) \Rightarrow \mathcal{A} \Rightarrow \mathcal{C}$]

[propcalc **rule** A3: $\forall\mathcal{A}\colon\forall\mathcal{B}\colon (\neg\mathcal{B} \Rightarrow \neg\mathcal{A}) \Rightarrow (\neg\mathcal{B} \Rightarrow \mathcal{A}) \Rightarrow \mathcal{B}$]

[propcalc **rule** MP: $\forall\mathcal{A}\colon\forall\mathcal{B}\colon \mathcal{A} \vdash \mathcal{A} \Rightarrow \mathcal{B} \vdash \mathcal{B}$]

[propcalc **lemma** mendelson lemma one eight: $\forall\mathcal{A}\colon \mathcal{A} \Rightarrow \mathcal{A}$] [1]

propcalc **proof of** mendelson lemma one eight:

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

[1] [mendelson lemma one eight $\overset{\text{pyk}}{=}$ “mendelson lemma one eight”]