

Logiweb codex of rapport

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rapport, , LEMMA3.2(a), LEMMA3.2(b), LEMMA3.2(c), LEMMA3.2(d), LEMMA3.2(f), LEMMA3.2(f)base, LEMMA3.2(f)induction, LEMMA3.2(g), LEMMA3.2(g)base, LEMMA3.2(g)induction, LEMMA3.2(h), LEMMA3.2(h)base, LEMMA3.2(h)induction, IMV, CImp, TImp,

rapport

[rapport $\xrightarrow{\text{pyk}}$ “rapport”]

[$\xrightarrow{\text{tex}}$ “”]

[$\xrightarrow{\text{pyk}}$ “blank space”]

LEMMA3.2(a)

[LEMMA3.2(a) $\xrightarrow{\text{proof}}$ $\lambda c. \lambda x. \mathcal{P}(\lceil S' \vdash \forall t: [[S5' \gg [[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}]] ; [[S1' \gg [[[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}] \Rightarrow [[[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{t}]]]] ; [[[[MP' \triangleright [[[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}] \Rightarrow [[[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{t}]]]] \triangleright [[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}]] \gg [[[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{t}]]] ; [[[MP' \triangleright [[[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{t}]]]] \triangleright [[\underline{t} \dot{+} \dot{0}] \stackrel{p}{=} \underline{t}]] \gg [\underline{t} \stackrel{p}{=} \underline{t}]]]] , p_0, c)$]

[LEMMA3.2(a) $\xrightarrow{\text{stmt}}$ $S' \vdash \forall t: [\underline{t} \stackrel{p}{=} \underline{t}]$]

[LEMMA3.2(a) $\xrightarrow{\text{tex}}$ “LEMMA 3.2(a)”]

[LEMMA3.2(a) $\xrightarrow{\text{pyk}}$ “mendelson lemma three two a”]

LEMMA3.2(b)

[LEMMA3.2(b) $\xrightarrow{\text{proof}}$ $\lambda c. \lambda x. \mathcal{P}(\lceil S' \vdash \forall t: \forall r: [[S1' \gg [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [[\underline{t} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]]] ; [[[CImp \triangleright [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [[\underline{t} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]]] \gg [[\underline{t} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]]] ; [[LEMMA3.2(a) \gg [\underline{t} \stackrel{p}{=} \underline{t}]]]$]

$] ; [[[MP' \triangleright [[\underline{t} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]]] \triangleright [\underline{t} \stackrel{p}{=} \underline{t}]] \gg [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]]]] , p_0, c]$

[LEMMA3.2(b) $\xrightarrow{\text{stmt}}$ $S' \vdash \forall \underline{t}. \forall \underline{r}. [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]]$

[LEMMA3.2(b) $\xrightarrow{\text{tex}}$ “LEMMA 3.2(b)”]

[LEMMA3.2(b) $\xrightarrow{\text{pyk}}$ “mendelson lemma three two b”]

LEMMA3.2(c)

[LEMMA3.2(c) $\xrightarrow{\text{proof}}$ $\lambda c. \lambda x. \mathcal{P}([S' \vdash \forall \underline{t}. \forall \underline{r}. \forall \underline{s}. [[S1' \gg [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{s}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{s}]]]] ; [[\text{LEMMA3.2(b)} \gg [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]]] ; [[[\text{TImp} \triangleright [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{t}]]] \triangleright [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{s}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{s}]]]] \gg [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{s}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{s}]]]]] , p_0, c)]$

[LEMMA3.2(c) $\xrightarrow{\text{stmt}}$ $S' \vdash \forall \underline{t}. \forall \underline{r}. \forall \underline{s}. [[\underline{t} \stackrel{p}{=} \underline{r}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{s}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{s}]]]]$

[LEMMA3.2(c) $\xrightarrow{\text{tex}}$ “LEMMA 3.2(c)”]

[LEMMA3.2(c) $\xrightarrow{\text{pyk}}$ “mendelson lemma three two c”]

LEMMA3.2(d)

[LEMMA3.2(d) $\xrightarrow{\text{proof}}$ $\lambda c. \lambda x. \mathcal{P}([S' \vdash \forall \underline{t}. \forall \underline{r}. \forall \underline{s}. [[\text{LEMMA3.2(c)} \gg [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{t} \stackrel{p}{=} \underline{s}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]] ; [[[\text{CImp} \triangleright [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{t} \stackrel{p}{=} \underline{s}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]]] \gg [[\underline{t} \stackrel{p}{=} \underline{s}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]] ; [[\text{LEMMA3.2(b)} \gg [[\underline{s} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{s}]]] ; [[[[\text{TImp} \triangleright [[\underline{s} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{t} \stackrel{p}{=} \underline{s}]]]] \triangleright [[\underline{t} \stackrel{p}{=} \underline{s}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]] \gg [[\underline{s} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]] ; [[\text{CImp} \triangleright [[\underline{s} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]]] \gg [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{s} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]]] , p_0, c)]$

[LEMMA3.2(d) $\xrightarrow{\text{stmt}}$ $S' \vdash \forall \underline{t}. \forall \underline{r}. \forall \underline{s}. [[\underline{r} \stackrel{p}{=} \underline{t}] \Rightarrow [[\underline{s} \stackrel{p}{=} \underline{t}] \Rightarrow [\underline{r} \stackrel{p}{=} \underline{s}]]]]$

[LEMMA3.2(d) $\xrightarrow{\text{tex}}$ “LEMMA 3.2(d)”]

[LEMMA3.2(d) $\xrightarrow{\text{pyk}}$ “mendelson lemma three two d”]

LEMMA3.2(f)

[LEMMA3.2(f) $\xrightarrow{\text{proof}}$ $\lambda c. \lambda x. \mathcal{P}([S' \vdash [[S9' \gg [[\dot{0} \stackrel{p}{=} [\dot{0} \dot{+} \dot{0}]] \Rightarrow [[\dot{\forall} \underline{t}. [[\dot{t} \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}]]]] \Rightarrow [\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}']]]]] \Rightarrow \dot{\forall} \underline{t}. [\dot{t} \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}]]]]]] ; [[\text{LEMMA3.2(f)base} \gg [\dot{0} \stackrel{p}{=} [\dot{0} \dot{+} \dot{0}]]] ; [[[[MP' \triangleright [[\dot{0} \stackrel{p}{=} [$

$\dot{0} \dot{+} \dot{0}]] \Rightarrow [[\dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]] \Rightarrow \dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]] \triangleright [\dot{0} \stackrel{P}{=} [\dot{0} \dot{+} \dot{0}]] \gg [[\dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]] \Rightarrow \dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]]] ; [[\text{LEMMA3.2(f)induction} \gg [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]]] ; [[[\text{Gen}' \triangleright [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]] \gg \dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]] ; [[[[\text{MP}' \triangleright [[\dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]] \Rightarrow \dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]]] \triangleright \dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]] \gg \dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]]] ; [[[[\text{A4}' @ [\dot{t}]] \gg [[\dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]]]] ; [[[[\text{MP}' \triangleright [[\dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]]] \triangleright \dot{\forall}t: [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]] \gg [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]]]]]]]]]] , p_0, c)]$

[LEMMA3.2(f) $\xrightarrow{\text{stmt}}$ $S' \vdash [\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]]]$

[LEMMA3.2(f) $\xrightarrow{\text{tex}}$ “LEMMA 3.2(f)”]

[LEMMA3.2(f) $\xrightarrow{\text{pyk}}$ “mendelson lemma three two f”]

LEMMA3.2(f)base

$[\text{LEMMA3.2(f)base} \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([S' \vdash [[S5' \gg [[\dot{0} \dot{+} \dot{0}] \stackrel{P}{=} \dot{0}]]] ; [[\text{LEMMA3.2(b)} \gg [[[[\dot{0} \dot{+} \dot{0}] \stackrel{P}{=} \dot{0}] \Rightarrow [\dot{0} \stackrel{P}{=} [\dot{0} \dot{+} \dot{0}]]]] ; [[[\text{MP}' \triangleright [[[[\dot{0} \dot{+} \dot{0}] \stackrel{P}{=} \dot{0}] \Rightarrow [\dot{0} \stackrel{P}{=} [\dot{0} \dot{+} \dot{0}]]]] \triangleright [[\dot{0} \dot{+} \dot{0}] \stackrel{P}{=} \dot{0}]] \gg [\dot{0} \stackrel{P}{=} [\dot{0} \dot{+} \dot{0}]]]]]] , p_0, c)]$

[LEMMA3.2(f)base $\xrightarrow{\text{stmt}}$ $S' \vdash [\dot{0} \stackrel{P}{=} [\dot{0} \dot{+} \dot{0}]]]$

[LEMMA3.2(f)base $\xrightarrow{\text{tex}}$ “LEMMA 3.2(f) base”]

[LEMMA3.2(f)base $\xrightarrow{\text{pyk}}$ “mendelson lemma three two f base”]

LEMMA3.2(f)induction

$[\text{LEMMA3.2(f)induction} \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([S' \vdash [[S6' \gg [[\dot{0} \dot{+} [\dot{t}']] \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']]] ; [[S2' \gg [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']]]] ; [[\text{LEMMA3.2(d)} \gg [[\dot{t}' \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']] \Rightarrow [[[\dot{0} \dot{+} [\dot{t}']] \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]] ; [[[[\text{TImp} \triangleright [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']]] \triangleright [[\dot{t}' \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']] \Rightarrow [[[\dot{0} \dot{+} [\dot{t}']] \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]] \gg [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [[[\dot{0} \dot{+} [\dot{t}']] \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]]] ; [[[[\text{CImp} \triangleright [[\dot{t} \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [[[\dot{0} \dot{+} [\dot{t}']] \stackrel{P}{=} [[\dot{0} \dot{+} [\dot{t}]] ']] \Rightarrow [\dot{t}' \stackrel{P}{=} [\dot{0} \dot{+} [\dot{t}']]]]]]]]]]]]$

$$\begin{aligned}
& [\dot{t}'] \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}]]' \Rightarrow [\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}']]] \gg [[[\dot{0} \dot{+} [\dot{t}']]] \stackrel{p}{=} [[[\dot{0} \dot{+} [\dot{t}]]']]] \Rightarrow [[[\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}']]]] \stackrel{p}{=} [[[\dot{0} \dot{+} [\dot{t}]]']]]]; \\
& [[[\text{MP}' \triangleright [[[\dot{0} \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{0} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}]]]]] \triangleright [[[\dot{0} \dot{+} [\dot{t}']]] \stackrel{p}{=} [[[\dot{0} \dot{+} [\dot{t}]]']]]] \gg [[[\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}]]]] \Rightarrow [\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}']]]], p_0, c)]
\end{aligned}$$

$$[\text{LEMMA3.2(f)induction} \xrightarrow{\text{stmt}} S' \vdash [[[\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}]]] \Rightarrow [\dot{t}' \stackrel{p}{=} [\dot{0} \dot{+} [\dot{t}']]]]]]$$

$$[\text{LEMMA3.2(f)induction} \xrightarrow{\text{tex}} \text{"LEMMA 3.2(f) induction"}]$$

$$[\text{LEMMA3.2(f)induction} \xrightarrow{\text{pyk}} \text{"mendelson lemma three two f induction"}]$$

LEMMA3.2(g)

$$\begin{aligned}
& [\text{LEMMA3.2(g)} \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([S' \vdash [[S9' \gg [[[\dot{r}' \dot{+} \dot{0}] \stackrel{p}{=} [[[\dot{r} \dot{+} \dot{0}]]']]]] \Rightarrow [[[\dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}']]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]]; \\
& \text{LEMMA3.2(g)base} \gg [[[\dot{r}' \dot{+} \dot{0}] \stackrel{p}{=} [[[\dot{r} \dot{+} \dot{0}]]']]]]; [[[\text{MP}' \triangleright [[[\dot{r}' \dot{+} \dot{0}] \stackrel{p}{=} [[[\dot{r} \dot{+} \dot{0}]]']]]] \Rightarrow [[[\dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}']]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \triangleright [[[\dot{r}' \dot{+} \dot{0}] \stackrel{p}{=} [[[\dot{r} \dot{+} \dot{0}]]']]] \gg [[[\dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]]; \\
& [\text{LEMMA3.2(g)induction} \gg [[[\dot{r}' \dot{+} [\dot{t}]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}']] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]]; [[[\text{Gen}' \triangleright [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}']] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \gg \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}']] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]]; \\
& [[[\text{MP}' \triangleright [[[\dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}']] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \triangleright \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}']] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \gg \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]]; \\
& [[[\text{A4}' @ [\dot{t}]] \gg [[[\dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]]; [[[\text{MP}' \triangleright [[[\dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \Rightarrow [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \triangleright \dot{v}\dot{t}: [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]] \gg [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]], p_0, c)]
\end{aligned}$$

$$[\text{LEMMA3.2(g)} \xrightarrow{\text{stmt}} S' \vdash [[[\dot{r}' \dot{+} [\dot{t}]]] \stackrel{p}{=} [[[\dot{r} \dot{+} [\dot{t}]]']]]]$$

$$[\text{LEMMA3.2(g)} \xrightarrow{\text{tex}} \text{"LEMMA 3.2(g)"}]$$

$$[\text{LEMMA3.2(g)} \xrightarrow{\text{pyk}} \text{"mendelson lemma three two g"}]$$