

$$\langle 1 \rangle \left( \begin{array}{c} \wedge \langle \overline{2} \rangle \\ \wedge \langle 2, 3 \rangle \end{array} \right)$$

$$\begin{array}{c} \langle 2 \rangle \\ \langle 1 \rangle \neg \\ \wedge \langle 1, 2 \rangle \\ \wedge \langle 1, 2, 3 \rangle \\ \langle 1, 2 \rangle \\ \langle 1, 2 \rangle \\ \neg \langle 1 \rangle \neg \\ \langle 1, 2 \rangle \\ \langle 1, 2, 3 \rangle \\ \langle 1, 2, 3 \rangle \\ \langle 1 \rangle \neg \\ ? \\ ? \\ ? \end{array}$$

$$\langle x \rangle \langle y \rangle \langle z \rangle \langle w \rangle \left( \begin{array}{c} (1, x) \neg \\ \wedge \langle 1, x \rangle \langle 2, y \rangle \\ \wedge \langle 1, x \rangle \langle 2, z \rangle \langle 3, w \rangle \end{array} \right)$$

$$\begin{array}{c} x, y, z \\ \overline{y} \\ \overline{x} \\ \overline{y} \\ \overline{x} \\ \overline{w} \\ ? \end{array}$$

$$\langle x \rangle \langle y \rangle [z] \langle w \rangle \left( \begin{array}{c} (1, x) \neg \\ \wedge \langle 1, x \rangle \langle 2, y \rangle \\ \wedge \langle 1, x \rangle \langle 2, z \rangle \langle 3, w \rangle \end{array} \right)$$

$$\begin{array}{c} [z] \\ \neg \\ \langle 1, x \rangle \langle 2, z \rangle \langle 3, w \rangle \\ x \\ \overline{w} \end{array}$$

$$\begin{array}{c} \langle 1 \rangle \left( \begin{array}{c} \wedge \langle \overline{+2} \rangle \\ \wedge \langle +2, 3 \rangle \end{array} \right) \\ ?? \\ x, y, z, w \end{array}$$

$$((1, x) \neg)$$

$$\begin{array}{c} \wedge ((1, x) \langle 2, y \rangle) \\ \wedge ((1, x) \langle 2, z \rangle \langle 3, w \rangle) \\ (1, x) \neg \\ (1, x) \langle 2, y \rangle \\ (1, x) \langle 2, z \rangle \langle 3, w \rangle \\ (1, x) \neg \\ (1, x) \langle 2, y \rangle \end{array}$$

$$\begin{array}{c} dep \\ idle \\ , , \perp \end{array}$$

$$\begin{array}{c} idle \\ , , \perp \end{array}$$

$$\begin{array}{c} de- \\ Done \\ , , \perp \end{array}$$

$$\begin{array}{c} x \\ (1, x) \neg \\ (1, x) \langle 2, y \rangle \\ y \\ (1, x) \langle 2, y \rangle \\ (1, x) \neg \\ (1, x) \langle 2, y \rangle \\ (1, x) \neg \\ (1, x) \langle 2, y \rangle \langle 2, z \rangle \langle 3, w \rangle \end{array}$$

$$\begin{array}{c} \overline{y} \\ \overline{w} \\ x, y, z \\ \overline{w} \end{array}$$

$$\begin{array}{c} ?? \\ x \\ idle \\ de- \\ Done \\ xfer- \\ Done \end{array}$$

$$\begin{array}{c} dep \\ xfer- \\ de- \end{array}$$

$v'$   
 $v'$   
 $m'$   
 $state$   
 $for-$   
 $mu-$   
 $las$   
 $tree$   
 $for-$   
 $mu-$   
 $las$   
 $path$   
 $for-$   
 $mu-$   
 $las$   
 $\phi$   
 $\tau$   
 $\theta$   
 $\phi::=p \mid \neg\phi_1 \mid \phi_1 \vee \phi_2 \mid \langle A \rangle \tau \mid \langle A \rangle \theta$   
 $\tau::=\tau_1 \vee \tau_2 \mid \tau_1 \wedge \tau_2 \mid \langle +A \rangle \tau_1 \mid \langle +A \rangle \theta$   
 $\theta::=\neg\theta_1 \mid \theta_1 \vee \theta_2 \mid \phi_1 \mid \phi_1 \phi_2$   
 $p$   
 $P$   
 $A$   
 $[1, m]$   
 $\langle A \rangle$   
 $strat-$   
 $egy$   
 $quan-$   
 $ti-$   
 $fier$   
 $SQ$   
 $\langle +A \rangle$   
 $strat-$   
 $egy$   
 $in-$   
 $ter-$   
 $tion$   
 $quan-$   
 $ti-$   
 $fier$   
 $SIQ$   
 $\langle A \rangle \psi$   
 $A$   
 $\psi$   
 $\langle +B \rangle \psi_1$   
 $B$   
 $\psi_1$   
 $\langle + \rangle$   
 $\phi$   
 $BSIL$   
 $for-$   
 $mu-$   
 $las$   
 $\underline{\underline{\lambda}}$   
 $\overline{p} \vee$   
 $(\neg p) \quad \equiv$   
 $\neg \quad \psi_1 \Rightarrow$   
 $\psi_2 \equiv$   
 $(\neg \psi_1) \vee$   
 $\psi_2$   
 $\phi_1 \equiv$   
 $\phi_1 \quad \phi_1 \equiv$   
 $\neg \neg \phi_1$   
 $\langle \{a_1, \dots, a_n\} \rangle$   
 $\langle +\{a_1, \dots, a_n\} \rangle$   
 $\langle a_1, \dots, a_n \rangle$   
 $\langle +a_1, \dots, a_n \rangle$   
 $\phi$   
 $\Sigma$   
 $, q \models_{\Sigma}$   
 $\phi$   
 $, q \models_{\Sigma}$   
 $p$   
 $p \in$   
 $\lambda(q)$   
 $\phi_1$   
 $, q \models_{\Sigma}$   
 $\neg \phi_1$   
 $, q \models_{\Sigma}$   
 $\phi_1$   
 $\psi_1$   
 $\psi_2$   
 $, q \models_{\Sigma}$   
 $\psi_1 \wedge$   
 $\psi_2$   
 $, q \models_{\Sigma}$   
 $\psi_1$   
 $, q \models_{\Sigma}$   
 $\psi_2$   
 $\psi_1$