$\neg_L$: $\Phi,\neg\alpha \circ \Psi$ $\Phi \circ \alpha,\Psi$	$\neg_R$: $\Phi \circ \neg\alpha,\Psi$ $\Phi,\alpha \circ \Psi$	$\forall_R$: $\phi\ o\ \forall x\varphi,\psi$ $\phi\ o\ [d_{k+1}/x]\varphi,\psi$ (1) $D = \{d_1, \ldots, d_k\}$ (2) ... (1) $D = \{d_1, \ldots, d_k\ d_{k+1}\}$ (2) ...
$\wedge_L$: $\Phi,\alpha \wedge \beta \circ \Psi$ $\Phi,\alpha,\beta \circ \Psi$	$\wedge_R$: $\Phi \circ \alpha \wedge \beta,\Psi$ $\Phi \circ \alpha,\Psi \quad \Phi \circ \beta,\Psi$	$\forall_L$: $\phi, \forall x\varphi\ o\ \psi$ $\phi, \forall x\varphi, [d_1/x]\varphi, \ldots, [d_k/x]\varphi\ o\ \psi$ (1) $D = \{d_1, \ldots, d_k\}$ (2) ... (1) $D = \{d_1, \ldots, d_k\}$ (2) $\forall x\varphi$: $\{d_1, \ldots, d_k\}$ ...
$\vee_L$: $\Phi,\alpha \vee \beta \circ \Psi$ $\Phi,\alpha \circ \Psi \quad \Phi,\beta \circ \Psi$	$\vee_R$: $\Phi \circ \alpha \vee \beta,\Psi$ $\Phi \circ \alpha,\beta,\Psi$	$\exists_L$: $\phi, \exists x\varphi\ o\ \psi$ $\phi, [d_{k+1}/x]\varphi\ o\ \psi$ (1) $D = \{d_1, \ldots, d_k\}$ (2) ... (1) $D = \{d_1, \ldots, d_k\ d_{k+1}\}$ (2) ...
$\rightarrow_L$: $\Phi,\alpha \rightarrow \beta \circ \Psi$ $\Phi,\beta \circ \Psi \quad \Phi \circ \alpha,\Psi$	$\rightarrow_R$: $\Phi \circ \alpha \rightarrow \beta,\Psi$ $\Phi,\alpha \circ \beta,\Psi$	$\exists_R$: $\phi\ o\ \exists x\varphi\ ,\psi$ $\phi\ o\ [d_1/x]\varphi, \ldots, [d_k/x]\varphi, \exists x\varphi, \psi$ (1) $D = \{d_1, \ldots, d_k\}$ (2) ... (1) $D = \{d_1, \ldots, d_k\}$ (2)$\exists x\varphi$: $\{d_1, \ldots, d_k\}$ ...
$\leftrightarrow_L$: $\Phi,\alpha \leftrightarrow \beta \circ \Psi$ $\Phi,\alpha,\beta \circ \Psi \quad \Phi \circ \alpha,\beta,\Psi$	$\leftrightarrow_R$: $\Phi \circ \alpha \leftrightarrow \beta,\Psi$ $\Phi,\alpha \circ \beta,\Psi \quad \Phi,\beta \circ \alpha,\Psi$	