Oef 60)

$$(\forall x\ \exists y\ (R(x,y) \to \exists w\ R(w,y)) \to \exists y\ \forall x\ (S(x,y) \to \exists w\ S(y,w)))$$

$\psi \to (\exists x\ \varphi) \equiv \exists x\ (\psi \to \varphi)$

$$\equiv (\forall x\ \exists y\ (R(x,y) \to \exists w\ R(w,y)) \to \exists y\ \forall x\ \exists w\ (S(x,y) \to S(y,w)))$$

$\psi \to (\exists x\ \varphi) \equiv \exists x\ (\psi \to \varphi)$

$$\equiv (\forall x\ \exists y\ \exists w\ (R(x,y) \to R(w,y)) \to \exists y\ \forall x\ \exists w\ (S(x,y) \to S(y,w)))$$

$\psi \to (\exists x\ \varphi) \equiv \exists x\ (\psi \to \varphi)$

$$\equiv \exists y\ (\forall x\ \exists y\ \exists w\ (R(x,y) \to R(w,y)) \to \forall x\ \exists w\ (S(x,y) \to S(y,w)))$$

$\psi \to (\forall x\ \varphi) \equiv \forall x\ (\psi \to \varphi)$

$$\equiv \exists y\ \forall x\ (\forall x\ \exists y\ \exists w\ (R(x,y) \to R(w,y)) \to \exists w\ (S(x,y) \to S(y,w)))$$

$\psi \to (\exists x\ \varphi) \equiv \exists x\ (\psi \to \varphi)$

$$\equiv \exists y\ \forall x\ \exists w\ (\forall x\ \exists y\ \exists w\ (R(x,y) \to R(w,y)) \to (S(x,y) \to S(y,w)))$$

alfabetische variant (x niet gebonden in ψ)

$$\equiv \exists y\ \forall x\ \exists w\ (\forall x'\ \exists y\ \exists w\ (R(x',y) \to R(w,y)) \to (S(x,y) \to S(y,w)))$$

$(\forall x\ \varphi) \to \psi \equiv \exists x\ (\varphi \to \psi)$

$$\equiv \exists y\ \forall x\ \exists w\ \exists x'\ (\exists y\ \exists w\ (R(x',y) \to R(w,y)) \to (S(x,y) \to S(y,w)))$$

alfabetische variant (y niet gebonden in ψ)

$$\equiv \exists y\ \forall x\ \exists w\ \exists x'\ \forall y'\ (\exists w\ (R(x',y') \to R(w,y')) \to (S(x,y) \to S(y,w)))$$

$(\exists x\ \varphi) \to \psi \equiv \forall x\ (\varphi \to \psi)$

$$\equiv \exists y\ \forall x\ \exists w\ \exists x'\ \forall y'\ (\exists w'\ (R(x',y') \to R(w',y')) \to (S(x,y) \to S(y,w)))$$

alfabetische variant (w niet gebonden in ψ)

$(\exists x\ \varphi) \to \psi \equiv \forall x\ (\varphi \to \psi)$

$$\equiv \exists y\ \forall x\ \exists w\ \exists x'\ \forall y'\ \forall w'\ ((R(x',y') \to R(w',y')) \to (S(x,y) \to S(y,w)))$$