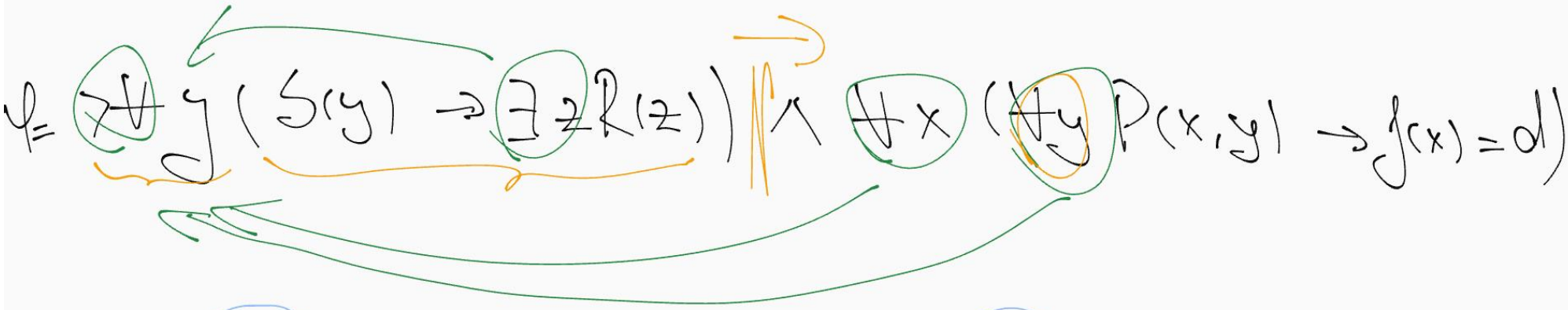

$\vdash \neg\forall y\,(S(y) \to \exists z R(z)) \wedge \forall x\,(\forall a\, P(x,a) \to f(x) = d)$

$\vdash \exists y \neg(S(y) \to \exists z R(z)) \wedge \forall x \exists a\,(P(x,a) \to f(x) = d)$

$\vdash \exists y \neg\exists z\,(S(y) \to R(z)) \wedge \forall x \exists a\,(P(x,a) \to f(x) = d)$

$\vdash \exists y \forall z \forall x \exists a\,(\neg(S(y) \to R(z)) \wedge (P(x,a) \to f(x) = d))$

$$\neg\forall y\,(S(y) \to \exists z\, R(z))$$

$$\equiv \exists y\,\neg(\neg S(y) \vee \exists z\, R(z))$$

$$\equiv \exists y\,(S(y) \wedge \neg\exists z\, R(z))$$

$$\equiv \exists y\,(S(y) \wedge \forall z\,\neg R(z))$$

$$\equiv \exists y \forall z\,(S(y) \wedge \neg R(z))$$

$p \to q \equiv \neg p \vee q$

$$\varphi := \exists x \big(S(x) \to \forall y \big(J(y) \to C\big)\big) \to \neg\big(\forall x\, T(x) \vee \forall y\, S(y)\big)$$

$$\equiv \exists x \big(S(x) \to \forall y \big(J(y) \to C\big)\big) \to \neg\big(\forall u\, T(u) \vee \forall v\, S(v)\big)$$

$$\equiv \exists x \forall y \big(S(x) \to \big(J(y) \to C\big)\big) \to \big(\neg\forall u\, T(u) \wedge \neg\forall v\, S(v)\big)$$

$$\equiv \exists x \forall y \big(S(x) \to \big(J(y) \to C\big)\big) \to \big(\exists u \neg T(u) \wedge \exists v \neg S(v)\big)$$

$$\equiv \exists x \forall y \big(S(x) \to \big(J(y) \to C\big)\big) \to \exists u \exists v \big(\neg T(u) \wedge \neg S(v)\big)$$

$$\equiv \exists x \forall y \exists u \exists v \big(\big(S(x) \to \big(J(y) \to C\big)\big) \to \big(\neg T(u) \wedge \neg S(v)\big)\big)$$

$$\varphi = \left(\exists x\, A(x) \to \forall y\, (f(y) \vee c)\right) \wedge \neg\left(\exists y\, (g(y) \to \neg \exists x\, B(x))\right)$$

$$\equiv \forall x \forall y \left(A(x) \to (f(y) \vee c)\right) \wedge \neg(\exists a\, (g(a) \to \forall b \neg B(b)))$$

$$\equiv \forall x\, \forall y\, (A(x) \to (f(y) \vee c)) \wedge \neg(\exists a \forall b\, (g(a) \to \neg B(b)))$$

$$\equiv \forall x\, \forall y\, (A(x) \to (f(y) \vee c)) \wedge \forall a\, \exists b \neg (g(a) \to \neg B(b))$$

$$\equiv \forall x \forall y \forall a \exists b \left((A(x) \to (f(y) \vee c)) \wedge \neg (g(a) \to \neg B(b))\right)$$

$$\varphi = \forall x \left(\exists u\, R(u,x) \wedge \exists u\, T(u) \wedge f(x) \right) \rightarrow \left(\neg \exists y\, S(y) \vee \exists z\, \neg T(z) \right)$$

$$\equiv \forall x \left(\left(\exists v\, R(v,x) \wedge \exists u\, T(u) \right) \wedge f(x) \right) \rightarrow \left(\forall y\, \neg S(y) \vee \exists z\, \neg T(z) \right)$$

$$\equiv \forall x \left(\exists v \exists u \left(R(v,x) \wedge T(u) \right) \wedge f(x) \right) \rightarrow \forall y \exists z \left(\neg S(y) \vee \neg T(z) \right)$$

$$\equiv \forall x \exists v \exists u \left(R(v,x) \wedge T(u) \wedge f(x) \right) \rightarrow \forall y \exists z \left(\neg S(y) \vee \neg T(z) \right)$$

$$\equiv \forall x \exists v \exists u \forall y \exists z \left(\left(R(v,x) \wedge T(u) \wedge f(x) \right) \rightarrow \left(\neg S(y) \vee \neg T(z) \right) \right)$$