

t32_nattra_1

(TMUHV6BYLN019Vuk5SPqrmpC8sHGnNpFdFk)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v2_cat_1 : \iota \Rightarrow o$ be given. Let $v3_cat_1 : \iota \Rightarrow o$ be given. Let $v4_cat_1 : \iota \Rightarrow o$ be given. Let $v5_cat_1 : \iota \Rightarrow o$ be given. Let $v6_cat_1 : \iota \Rightarrow o$ be given. Let $l1_cat_1 : \iota \Rightarrow o$ be given. Let $m2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_nattra_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_nattra_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_nattra_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m4_nattra_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (k4_tarski\ X0\ X1 = k4_tarski\ X2\ X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0\ X0) \wedge ((\neg v11_struct_0\ X0) \wedge \\ & ((v2_cat_1\ X0) \wedge ((v3_cat_1\ X0) \wedge ((v4_cat_1\ X0) \wedge ((v5_cat_1\ X0) \wedge \\ & ((v6_cat_1\ X0) \wedge (l1_cat_1\ X0)))))))))) \wedge ((\neg v2_struct_0\ X1) \wedge ((\neg \\ & v11_struct_0\ X1) \wedge ((v2_cat_1\ X1) \wedge ((v3_cat_1\ X1) \wedge ((v4_cat_1\ X1) \wedge \\ & ((v5_cat_1\ X1) \wedge ((v6_cat_1\ X1) \wedge (l1_cat_1\ X1)))))))))) \Rightarrow (m4_nattra_1 \\ & (k10_nattra_1\ X0\ X1)\ X0\ X1) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0\ X0) \wedge ((\neg v11_struct_0\ X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1\ X0) \wedge ((v4_cat_1\ X0) \wedge ((v5_cat_1\ X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1\ X0)))))))))) \Rightarrow (\forall X1. ((\neg v2_struct_0\ X1) \wedge ((\neg \\ & v11_struct_0\ X1) \wedge ((v2_cat_1\ X1) \wedge ((v3_cat_1\ X1) \wedge ((v4_cat_1 \\ & X1) \wedge ((v5_cat_1\ X1) \wedge ((v6_cat_1\ X1) \wedge (l1_cat_1\ X1)))))))))) \Rightarrow (\forall X2. \\ & (m4_nattra_1\ X2\ X0\ X1) \Rightarrow ((X2 = k10_nattra_1\ X0\ X1) \Leftrightarrow (\forall X3. (\\ & X3 \in X2) \Leftrightarrow (\exists X4. (m2_cat_1\ X4\ X0\ X1) \wedge (\exists X5. (m2_cat_1 \\ & X5\ X0\ X1) \wedge (\exists X6. (m2_nattra_1\ X6\ X0\ X1\ X4\ X5) \wedge ((X3 = k4_tarski \\ & (k4_tarski\ X4\ X5)\ X6) \wedge (r2_nattra_1\ X0\ X1\ X4\ X5)))))))))) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((\\ & \neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1))))))) \Rightarrow (\forall X2. \\ & (m2_cat_1 X2 X0 X1) \Rightarrow (\forall X3.(m2_cat_1 X3 X0 X1) \Rightarrow (\forall X4. \\ & (m2_nattrra_1 X4 X0 X1 X2 X3) \Rightarrow ((r2_nattrra_1 X0 X1 X2 X3) \Leftrightarrow (k4_tarski \\ & (k4_tarski X2 X3) X4 \in k10_nattrra_1 X0 X1)))))) \end{aligned}$$