

t14_zfrefle1

(TMTm35Q9e56XimErGH9JKd5NoUKE9Hm8FHr)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_ordinal2 : \iota \Rightarrow o$ be given. Let $v2_ordinal2 : \iota \Rightarrow o$ be given. Let $k1_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_ordinal1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v3_ordinal1 X2) \Rightarrow ((X0 \in X1) \Rightarrow (k10_ordinal2 X2 X0 \in k10_ordinal2 \\ & X2 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(v1_ordinal1 X2) \Rightarrow (((X0 \in X1) \wedge \\ & (X1 \in X2)) \Rightarrow (X0 \in X2)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v5_ordinal1 X0))) \Rightarrow \\ & (v3_ordinal1 (k9_xtuple_0 X0)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v5_ordinal1 X0) \wedge ((v1_relat_1 X0) \wedge \\ & (v1_funct_1 X0) \wedge (v1_ordinal2 X0)))) \wedge (v3_ordinal1 X1) \Rightarrow (v3_ordinal1 \\ & (k1_funct_1 X0 X1)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v3_ordinal1 X0) \wedge ((v5_ordinal1 X1) \wedge \\ & (v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_ordinal2 X1)))) \Rightarrow ((v5_ordinal1 \\ & (k1_ordinal3 X0 X1)) \wedge ((v1_relat_1 (k1_ordinal3 X0 X1)) \wedge ((v1_funct_1 \\ & (k1_ordinal3 X0 X1)) \wedge (v1_ordinal2 (k1_ordinal3 X0 X1)))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v5_ordinal1\ X1) \wedge \\ (v1_relat_1\ X1) \wedge ((v1_funct_1\ X1) \wedge (v1_ordinal2\ X1)))) \Rightarrow (\forall X2. \\ ((v5_ordinal1\ X2) \wedge ((v1_relat_1\ X2) \wedge ((v1_funct_1\ X2) \wedge (v1_ordinal2 \\ X2)))) \Rightarrow ((X2 = k1_ordinal3\ X0\ X1) \Leftrightarrow ((k9_xtuple_0\ X2 = k9_xtuple_0 \\ X1) \wedge (\forall X3.(v3_ordinal1\ X3) \Rightarrow ((X3 \in k9_xtuple_0\ X1) \Rightarrow (k1_funct_1 \\ X2\ X3 = k10_ordinal2\ X0\ (k1_funct_1\ X1\ X3))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v5_ordinal1\ X0) \wedge ((v1_relat_1\ X0) \wedge ((v1_funct_1 \\ X0) \wedge (v1_ordinal2\ X0)))) \Rightarrow ((v2_ordinal2\ X0) \Leftrightarrow (\forall X1.(v3_ordinal1 \\ X1) \Rightarrow (\forall X2.(v3_ordinal1\ X2) \Rightarrow (((X1 \in X2) \wedge (X2 \in k9_xtuple_0 \\ X0)) \Rightarrow (k1_funct_1\ X0\ X1 \in k1_funct_1\ X0\ X2)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v3_ordinal1\ X0) \Rightarrow ((v1_ordinal1\ X0) \wedge (v2_ordinal1\ X0)) \quad (8)$$

Theorem 1

$$\begin{aligned} \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_relat_1\ X1) \wedge ((\\ v5_ordinal1\ X1) \wedge ((v1_funct_1\ X1) \wedge (v1_ordinal2\ X1)))) \Rightarrow ((v2_ordinal2 \\ X1) \Rightarrow (v2_ordinal2\ (k1_ordinal3\ X0\ X1)))) \end{aligned}$$