

t28_ordinal2

(TMaTubw76kxBJ8EUGNJ7Z1WsVVEk82bmayR)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k10_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_ordinal1 : \iota \Rightarrow \iota$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_ordinal2 : \iota \Rightarrow o$ be given. Let $k1_ordinal2 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v4_ordinal1 : \iota \Rightarrow o$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0 : \iota \Rightarrow \iota. \forall X1 : \iota \Rightarrow \iota \Rightarrow \iota. \forall X2 : \iota \Rightarrow \iota \Rightarrow \\
 & \quad \iota. \forall X3. ((v3_ordinal1 X3) \wedge ((\forall X4. \forall X5. v3_ordinal1 \\
 & \quad (X2 X4 X5)) \wedge ((\forall X4. \forall X5. v3_ordinal1 (X1 X4 X5)) \wedge (\forall X4. \\
 & \quad v3_ordinal1 (X0 X4)))))) \Rightarrow ((\forall X4. (v3_ordinal1 X4) \Rightarrow (\forall X5. \\
 & \quad (v3_ordinal1 X5) \Rightarrow ((X5 = X0 X4) \Leftrightarrow (\exists X6. ((v5_ordinal1 X6) \wedge \\
 & \quad (v1_relat_1 X6) \wedge (v1_funct_1 X6) \wedge (v1_ordinal2 X6)))))) \wedge ((X5 = \\
 & \quad k1_ordinal2 X6) \wedge (k9_xtuple_0 X6 = k1_ordinal1 X4) \wedge ((k1_funct_1 \\
 & \quad X6 k1_xboole_0 = X3) \wedge ((\forall X7. (v3_ordinal1 X7) \Rightarrow ((k1_ordinal1 \\
 & \quad X7 \in k1_ordinal1 X4) \Rightarrow (k1_funct_1 X6 (k1_ordinal1 X7) = X2 X7 (k1_funct_1 \\
 & \quad X6 X7)))))) \wedge (\forall X7. (v3_ordinal1 X7) \Rightarrow (((X7 \in k1_ordinal1 X4) \wedge \\
 & \quad (v4_ordinal1 X7)) \Rightarrow ((X7 = k1_xboole_0) \vee (k1_funct_1 X6 X7 = X1 X7 \\
 & \quad (k5_relat_1 X6 X7)))))))))) \Rightarrow (\forall X4. (v3_ordinal1 X4) \Rightarrow \\
 & \quad (X0 (k1_ordinal1 X4) = X2 X4 (X0 X4)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. (v3_ordinal1 X1) \Rightarrow (\forall X2. \\
 & \quad (v3_ordinal1 X2) \Rightarrow ((X2 = k10_ordinal2 X0 X1) \Leftrightarrow (\exists X3. ((v5_ordinal1 \\
 & \quad X3) \wedge ((v1_relat_1 X3) \wedge ((v1_funct_1 X3) \wedge (v1_ordinal2 X3)))))) \wedge \\
 & \quad ((X2 = k1_ordinal2 X3) \wedge (k9_xtuple_0 X3 = k1_ordinal1 X1) \wedge ((k1_funct_1 \\
 & \quad X3 k1_xboole_0 = X0) \wedge ((\forall X4. (v3_ordinal1 X4) \Rightarrow ((k1_ordinal1 \\
 & \quad X4 \in k1_ordinal1 X1) \Rightarrow (k1_funct_1 X3 (k1_ordinal1 X4) = k1_ordinal1 \\
 & \quad (k1_funct_1 X3 X4)))))) \wedge (\forall X4. (v3_ordinal1 X4) \Rightarrow (((X4 \in k1_ordinal1 \\
 & \quad X1) \wedge (v4_ordinal1 X4)) \Rightarrow ((X4 = k1_xboole_0) \vee (k1_funct_1 X3 X4 = \\
 & \quad k4_ordinal2 (k5_relat_1 X3 X4))))))))))
 \end{aligned} \tag{2}$$

Theorem 1

$$\forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.(v3_ordinal1\ X1) \Rightarrow (k10_ordinal2\ X0\ (k1_ordinal1\ X1) = k1_ordinal1\ (k10_ordinal2\ X0\ X1)))$$