

t12_ordinal4

(TMPBrmrZnry6yYKNnrw6te3pwmVoL7Dms9r)

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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 $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (r1_tarski (k10_xtuple_0 (k3_relat_1 X0 X1)) (k10_xtuple_0 X1))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (k9_xtuple_0 (k3_relat_1 X0 X1) = k8_relat_1 X0 (k9_xtuple_0 X1))) \quad (3)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_ordinal2 X0)))) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow ((v2_ordinal2 X0) \Rightarrow (v3_ordinal1 (k8_relat_1 X0 X1)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 X1)) \wedge (v1_funct_1 (k3_relat_1 X0 X1))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k3_relat_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(v5_ordinal1\ X0)\Leftrightarrow(v3_ordinal1\ (k9_xtuple_0\ X0)) \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge(v1_funct_1\ X0))\Rightarrow((v1_ordinal2\ X0)\Leftrightarrow(\exists X1.(v3_ordinal1\ X1)\wedge(r1_tarski\ (k10_xtuple_0\ X0\ X1)))) \quad (8)$$

Theorem 1

$$\begin{aligned} &\forall X0.((v1_relat_1\ X0)\wedge((v5_ordinal1\ X0)\wedge((v1_funct_1\ X0)\wedge(v1_ordinal2\ X0))))\Rightarrow(\forall X1.((v1_relat_1\ X1)\wedge((v5_ordinal1\ X1)\wedge((v1_funct_1\ X1)\wedge(v1_ordinal2\ X1))))\Rightarrow((v2_ordinal2\ X0)\Rightarrow \\ &((v1_relat_1\ (k3_relat_1\ X0\ X1))\wedge((v5_ordinal1\ (k3_relat_1\ X0\ X1))\wedge((v1_funct_1\ (k3_relat_1\ X0\ X1))\wedge(v1_ordinal2\ (k3_relat_1\ X0\ X1)))))) \end{aligned}$$