t13_ordinal4 (TMR-Zob7rEmjTinAMVbQzawUn2PQN4ikiSFE)

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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 $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_ordinal1 : \iota \Rightarrow o$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $v2\_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v5\_ordinal1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_ordinal2\ X0)))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v5\_ordinal1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_ordinal2\ X1)))) \Rightarrow ((v2\_ordinal2\ X0) \Rightarrow ((v1\_relat\_1\ (k3\_relat\_1\ X0\ X1)) \wedge ((v5\_ordinal1\ (k3\_relat\_1\ X0\ X1)) \wedge ((v1\_funct\_1\ (k3\_relat\_1\ X0\ X1)) \wedge (v1\_ordinal2\ (k3\_relat\_1\ X0\ X1)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((X0 \in k9\_xtuple\_0\ (k3\_relat\_1\ X2\ X1)) \Rightarrow (k1\_funct\_1\ (k3\_relat\_1\ X2\ X1)\ X0 = k1\_funct\_1\ X1\ (k1\_funct\_1\ X2\ X0)))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((X0 \in k9\_xtuple\_0\ (k3\_relat\_1\ X2\ X1)) \Leftrightarrow ((X0 \in k9\_xtuple\_0\ X2) \wedge (k1\_funct\_1\ X2\ X0 \in k9\_xtuple\_0\ X1)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_ordinal1\ X2) \Rightarrow (((X0 \in X1) \wedge (X1 \in X2)) \Rightarrow (X0 \in X2)) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v5\_ordinal1\ X0))) \Rightarrow (v3\_ordinal1\ (k9\_xtuple\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((v5\_ordinal1\ X0)\wedge((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_ordinal2\ X0))))\wedge(v3\_ordinal1\ X1))\Rightarrow(v3\_ordinal1\ (k1\_funct\_1\ X0\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\wedge((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1)))\Rightarrow((v1\_relat\_1\ (k3\_relat\_1\ X0\ X1))\wedge(v1\_funct\_1\ (k3\_relat\_1\ X0\ X1))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k3\_relat\_1\ X0\ X1) \tag{8}$$

Assume the following.

$$\forall X0.((v5\_ordinal1\ X0)\wedge((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_ordinal2\ X0))))\Rightarrow((v2\_ordinal2\ X0)\Leftrightarrow(\forall X1.(v3\_ordinal1\ X1)\Rightarrow(\forall X2.(v3\_ordinal1\ X2)\Rightarrow(((X1\in X2)\wedge(X2\in k9\_xtuple\_0\ X0))\Rightarrow(k1\_funct\_1\ X0\ X1\in k1\_funct\_1\ X0\ X2))))) \tag{9}$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0)\Rightarrow((v1\_ordinal1\ X0)\wedge(v2\_ordinal1\ X0)) \tag{10}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v5\_ordinal1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_ordinal2\ X0))))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v5\_ordinal1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_ordinal2\ X1))))\Rightarrow(\neg(v2\_ordinal2\ X0)\wedge((v2\_ordinal2\ X1)\wedge(\forall X2.((v1\_relat\_1\ X2)\wedge((v5\_ordinal1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_ordinal2\ X2))))\Rightarrow(\neg(X2=k3\_relat\_1\ X1\ X0)\wedge(v2\_ordinal2\ X2))))))$$