

t11_arytm_3 (TMdBYihyuD- wnUY9Wc7TCt7QpodAV5LM6okg)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r2_arytm_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v3_ordinal1 X2) \Rightarrow (k5_ordinal3 (k11_ordinal2 X0 X1) (k11_ordinal2 \\ & X2 X1) = k11_ordinal2 (k5_ordinal3 X0 X2) X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3_ordinal1 X0) \wedge (v7_ordinal1 X0)) \Rightarrow (\forall X1. \\ & ((v3_ordinal1 X1) \wedge (v7_ordinal1 X1)) \Rightarrow ((r2_arytm_3 X0 X1) \Leftrightarrow (\exists X2. \\ & ((v3_ordinal1 X2) \wedge (v7_ordinal1 X2)) \wedge (X1 = k9_ordinal3 X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow (k5_ordinal3 \\ & (k10_ordinal2 X0 X1) X0 = X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v3_ordinal1 X0) \wedge (v7_ordinal1 X0)) \wedge \\ & ((v3_ordinal1 X1) \wedge (v7_ordinal1 X1))) \Rightarrow (k9_ordinal3 X0 X1 = k11_ordinal2 \\ & X0 X1) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v3_ordinal1 X0) \wedge (v7_ordinal1 X0)) \wedge \\ & ((v3_ordinal1 X1) \wedge (v7_ordinal1 X1))) \Rightarrow (k8_ordinal3 X0 X1 = k10_ordinal2 \\ & X0 X1) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v7_ordinal1 X0) \wedge (v7_ordinal1 X1)) \Rightarrow (\\ & (v3_ordinal1 (k10_ordinal2 X0 X1)) \wedge (v7_ordinal1 (k10_ordinal2 \\ & X0 X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((v3_ordinal1\ X0)\wedge(v7_ordinal1\ X0))\wedge((v3_ordinal1\ X1)\wedge(v7_ordinal1\ X1)))\Rightarrow((v3_ordinal1\ (k11_ordinal2\ X0\ X1))\wedge(v7_ordinal1\ (k11_ordinal2\ X0\ X1))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((v3_ordinal1\ X0)\wedge(v7_ordinal1\ X0))\wedge((v3_ordinal1\ X1)\wedge(v7_ordinal1\ X1)))\Rightarrow((v3_ordinal1\ (k5_ordinal3\ X0\ X1))\wedge(v7_ordinal1\ (k5_ordinal3\ X0\ X1))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v3_ordinal1\ X0)\wedge(v7_ordinal1\ X0))\wedge((v3_ordinal1\ X1)\wedge(v7_ordinal1\ X1)))\Rightarrow(k9_ordinal3\ X0\ X1 = k9_ordinal3\ X1\ X0) \quad (9)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v3_ordinal1\ X0) \quad (10)$$

Theorem 1

$$\forall X0.((v3_ordinal1\ X0)\wedge(v7_ordinal1\ X0))\Rightarrow(\forall X1.((v3_ordinal1\ X1)\wedge(v7_ordinal1\ X1))\Rightarrow(\forall X2.((v3_ordinal1\ X2)\wedge(v7_ordinal1\ X2))\Rightarrow(((r2_arytm_3\ X0\ X1)\wedge(r2_arytm_3\ X0\ (k8_ordinal3\ X1\ X2)))\Rightarrow(r2_arytm_3\ X0\ X2))))$$