

t18_arytm_3 (TMKB-
skA82W46PWwdW9YBVjfgSw8Gi74iscL)

October 27, 2020

Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_arytm_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_arytm_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v3_ordinal1 X0) \wedge (v7_ordinal1 X0)) \Rightarrow (\forall X1. \\ & ((v3_ordinal1 X1) \wedge (v7_ordinal1 X1)) \Rightarrow ((r2_arytm_3 X1 X0) \Leftrightarrow (X0 = \\ & k9_ordinal3 X1 (k6_ordinal3 X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (k11_ordinal2 k1_xboole_0 X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$m1_subset_1 k1_xboole_0 k4_ordinal1 \quad (3)$$

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.

$$\begin{aligned} & \forall X0. \forall X1. (((v3_ordinal1 X0) \wedge (v7_ordinal1 X0)) \wedge \\ & ((v3_ordinal1 X1) \wedge (v7_ordinal1 X1))) \Rightarrow ((v3_ordinal1 (k6_ordinal3 \\ & X0 X1)) \wedge (v7_ordinal1 (k6_ordinal3 X0 X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v3_ordinal1 X0) \wedge (v7_ordinal1 X0)) \wedge \\ & ((v3_ordinal1 X1) \wedge (v7_ordinal1 X1))) \Rightarrow (m1_subset_1 (k3_arytm_3 \\ & X0 X1) k4_ordinal1) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3_ordinal1\ X0)\wedge(v7_ordinal1\ X0))\Rightarrow(\forall X1. \\ & ((v3_ordinal1\ X1)\wedge(v7_ordinal1\ X1))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2\ k4_ordinal1)\Rightarrow((X2 = k3_arytm_3\ X0\ X1)\Leftrightarrow((r2_arytm_3\ X2\ X0)\wedge(\\ & (r2_arytm_3\ X2\ X1)\wedge(\forall X3.((v3_ordinal1\ X3)\wedge(v7_ordinal1 \\ & X3))\Rightarrow(((r2_arytm_3\ X3\ X0)\wedge(r2_arytm_3\ X3\ X1))\Rightarrow(r2_arytm_3\ X3 \\ & X2)))))))) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v3_ordinal1\ X0)\wedge(v7_ordinal1\ X0))\wedge \\ & ((v3_ordinal1\ X1)\wedge(v7_ordinal1\ X1)))\Rightarrow(k9_ordinal3\ X0\ X1 = k9_ordinal3 \\ & X1\ X0) \end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k4_ordinal1)\Rightarrow(v7_ordinal1\ X0) \tag{9}$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v3_ordinal1\ X0) \tag{10}$$

Theorem 1

$$\begin{aligned} & \forall X0.((v3_ordinal1\ X0)\wedge(v7_ordinal1\ X0))\Rightarrow(\forall X1. \\ & ((v3_ordinal1\ X1)\wedge(v7_ordinal1\ X1))\Rightarrow((X0\neq k1_xboole_0)\Rightarrow((k3_arytm_3 \\ & X1\ X0\neq k1_xboole_0)\wedge(k6_ordinal3\ X0\ (k3_arytm_3\ X1\ X0)\neq k1_xboole_0)))) \end{aligned}$$