

t62_chain_1 (TMP- Dog5LN5opGAKz5SAM6Bwc7oCLbf3JPCS)

October 27, 2020

Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $m1_chain_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k7_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_chain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xreal_0 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (m2_subset_1 X1 k1_numbers k5_numbers)) \Rightarrow \\ & (\forall X2.(m1_chain_1 X2 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k4_chain_1 X1 X2 (k2_nat_1 X0 np_1)))) \Rightarrow (\forall X4.(m1_subset_1 \\ & X4 (k1_zfmisc_1 (k4_chain_1 X1 X2 (k2_nat_1 X0 np_1)))) \Rightarrow (k10_chain_1 \\ & X1 X2 X0 (k7_chain_1 X1 X2 (k2_nat_1 X0 np_1) X3 X4) = k7_chain_1 X1 \\ & X2 X0 (k10_chain_1 X1 X2 X0 X3) (k10_chain_1 X1 X2 X0 X4)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m1_chain_1 X1 (k2_nat_1 X0 np_1)) \Rightarrow (k10_chain_1 (k2_nat_1 X0 \\ & np_1) X1 X0 (k6_chain_1 (k2_nat_1 X0 np_1) X1) = k5_chain_1 (k2_nat_1 \\ & X0 np_1) X1 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.k5_xboole_0 X0 k1_xboole_0 = X0 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ & (\forall X1.(m1_chain_1 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k4_chain_1 X0 X1 X0))) \Rightarrow (k3_subset_1 (k4_chain_1 X0 X1 X0) X2 = k7_chain_1 \\ & X0 X1 X0 X2 (k6_chain_1 X0 X1)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\neg v1_xboole_0 np_1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1_xboole_0 \\ & X0) \wedge (m1_subset_1 X0 k5_numbers)) \wedge ((m1_chain_1 X1 X0) \wedge ((m1_subset_1 \\ & X2 k5_numbers) \wedge ((m1_subset_1 X3 (k1_zfmisc_1 (k4_chain_1 X0 X1 \\ & X2))) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k4_chain_1 X0 X1 X2)))))) \Rightarrow \\ & (k7_chain_1 X0 X1 X2 X3 X4 = k5_xboole_0 X3 X4) \end{aligned} \quad (9)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 \\ & X1)) \Rightarrow (k2_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (v1_xboole_0 X1) \quad (12)$$

Assume the following.

$$\neg v1_finset_1 k4_ordinal1 \quad (13)$$

Assume the following.

$$v6_membered k4_ordinal1 \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1\ X0)\wedge((\neg v1_xboole_0\ X1)\wedge (v7_ordinal1\ X1)))\Rightarrow(\neg v1_xboole_0\ (k2_xcmplx_0\ X0\ X1)) \quad (15)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v1_xboole_0\ X0)\wedge(m1_subset_1\ X0\ k5_numbers))\wedge (m1_chain_1\ X1\ X0))\Rightarrow(m1_subset_1\ (k6_chain_1\ X0\ X1)\ (k1_zfmisc_1\ (k4_chain_1\ X0\ X1\ X0))) \quad (17)$$

Assume the following.

$$m1_subset_1\ k5_numbers\ (k1_zfmisc_1\ k1_numbers) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k5_numbers)\wedge(v7_ordinal1\ X1))\Rightarrow(m2_subset_1\ (k2_nat_1\ X0\ X1)\ k1_numbers\ k5_numbers) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0\ X0)\wedge(m1_subset_1\ X0\ k5_numbers))\wedge((m1_chain_1\ X1\ X0)\wedge((m1_subset_1\ X2\ k5_numbers)\wedge(m1_subset_1\ X3\ (k1_zfmisc_1\ (k4_chain_1\ X0\ X1\ (k2_nat_1\ X2\ np_1)))))))\Rightarrow(m1_subset_1\ (k10_chain_1\ X0\ X1\ X2\ X3)\ (k1_zfmisc_1\ (k4_chain_1\ X0\ X1\ X2))) \quad (20)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0\ X0)\wedge(m2_subset_1\ X0\ k1_numbers\ k5_numbers))\Rightarrow(\forall X1.(m1_chain_1\ X1\ X0)\Rightarrow(\forall X2.(m2_subset_1\ X2\ k1_numbers\ k5_numbers)\Rightarrow(k5_chain_1\ X0\ X1\ X2 = k1_xboole_0))) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0\ X0)\wedge(v1_xcmplx_0\ X1))\Rightarrow(k2_xcmplx_0\ X0\ X1 = k2_xcmplx_0\ X1\ X0) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k5_numbers)\wedge(v7_ordinal1\ X1))\Rightarrow(k2_nat_1\ X0\ X1 = k2_nat_1\ X1\ X0) \quad (23)$$

Assume the following.

$$\forall X0.(v3_membered\ X0)\Rightarrow(v1_membered\ X0) \quad (24)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_finset_1 X0) \quad (26)$$

Assume the following.

$$\forall X0.(v1_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_membered X1)) \quad (27)$$

Assume the following.

$$\forall X0.(v6_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v7_ordinal1 X1)) \quad (28)$$

Assume the following.

$$\forall X0.(v1_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xcmplx_0 X1)) \quad (29)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m1_chain_1 X1 (k2_nat_1 X0 np_1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k4_chain_1 (k2_nat_1 X0 np_1) X1 (k2_nat_1 X0 \\ & np_1)))) \Rightarrow (k10_chain_1 (k2_nat_1 X0 np_1) X1 X0 (k3_subset_1 \\ & (k4_chain_1 (k2_nat_1 X0 np_1) X1 (k2_nat_1 X0 np_1)) X2) = k10_chain_1 \\ & (k2_nat_1 X0 np_1) X1 X0 X2))) \end{aligned}$$