

t32_ec_pf_2

(TMdmrM5PSSUkWbG1K9SSrSzt3yN81VDMPxj)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_int_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k9_int_3 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_ec_pf_1 : \iota \Rightarrow \iota$ be given. Let $k6_ec_pf_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ec_pf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_ec_pf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_ec_pf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k3_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\forall X3. (m1_subset_1 X3 (k3_zfmisc_1 \\ & X0 X1 X2)) \Rightarrow (X3 = k3_xtuple_0 (k1_mcart_1 X0 X1 X2 X3) (k2_mcart_1 \\ & X0 X1 X2 X3) (k3_mcart_1 X0 X1 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((v7_ordinal1\ X0)\wedge(v1_int_2\ X0))\Rightarrow(\forall X1.(m1_subset_1 \\ X1\ (u1_struct_0\ (k9_int_3\ X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (\\ u1_struct_0\ (k9_int_3\ X0)))\Rightarrow(\forall X3.(m2_subset_1\ X3\ (k3_ec_pf_1 \\ (k9_int_3\ X0))\ (k6_ec_pf_1\ X0\ X1\ X2))\Rightarrow(X3 = k4_domain_1\ (u1_struct_0 \\ (k9_int_3\ X0))\ (u1_struct_0\ (k9_int_3\ X0))\ (u1_struct_0\ (k9_int_3 \\ X0))\ (k4_ec_pf_2\ X0\ X1\ X2\ X3)\ (k5_ec_pf_2\ X0\ X1\ X2\ X3)\ (k6_ec_pf_2 \\ X0\ X1\ X2\ X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0\ X0)\wedge((\neg v1_xboole_0\ X1)\wedge \\ (m1_subset_1\ X1\ (k1_zfmisc_1\ X0))))\Rightarrow(\forall X2.(m2_subset_1 \\ X2\ X0\ X1)\Leftrightarrow(m1_subset_1\ X2\ X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ ((\neg v1_xboole_0\ X0)\wedge((\neg v1_xboole_0\ X1)\wedge((\neg v1_xboole_0\ X2)\wedge(\\ (m1_subset_1\ X3\ X0)\wedge((m1_subset_1\ X4\ X1)\wedge(m1_subset_1\ X5\ X2))))))\Rightarrow \\ (k4_domain_1\ X0\ X1\ X2\ X3\ X4\ X5 = k3_xtuple_0\ X3\ X4\ X5) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0\ X0)\wedge \\ ((\neg v1_xboole_0\ X1)\wedge((\neg v1_xboole_0\ X2)\wedge(m1_subset_1\ X3\ (k3_zfmisc_1 \\ X0\ X1\ X2))))))\Rightarrow(k1_mcart_1\ X0\ X1\ X2\ X3 = k4_xtuple_0\ X3) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k2_xtuple_0\ (k3_xtuple_0\ X0\ X1\ X2) = X2 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k5_xtuple_0\ (k3_xtuple_0\ X0\ X1\ X2) = X1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k4_xtuple_0\ (k3_xtuple_0\ X0\ X1\ X2) = X0 \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((v7_ordinal1\ X0)\wedge(v1_int_2\ X0))\Rightarrow((\neg v6_struct_0 \\ (k9_int_3\ X0))\wedge((v13_algstr_0\ (k9_int_3\ X0))\wedge((v33_algstr_0 \\ (k9_int_3\ X0))\wedge((v3_group_1\ (k9_int_3\ X0))\wedge((v5_group_1\ (k9_int_3 \\ X0))\wedge((v2_rlvect_1\ (k9_int_3\ X0))\wedge((v3_rlvect_1\ (k9_int_3\ X0))\wedge \\ ((v4_rlvect_1\ (k9_int_3\ X0))\wedge((v4_vectsp_1\ (k9_int_3\ X0))\wedge(\\ v5_vectsp_1\ (k9_int_3\ X0)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v7_ordinal1 X0)) \Rightarrow ((\neg v2_struct_0 (k9_int_3 X0)) \wedge (v36_algstr_0 (k9_int_3 X0))) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 X2 X0 X1) \Rightarrow (m1_subset_1 X2 X0)) \quad (12)$$

Assume the following.

$$\forall X0. (l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0. (l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (14)$$

Assume the following.

$$\forall X0. (l1_algstr_0 X0) \Rightarrow (l1_struct_0 X0) \quad (15)$$

Assume the following.

$$\forall X0. (v7_ordinal1 X0) \Rightarrow (l6_algstr_0 (k9_int_3 X0)) \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 (k9_int_3 X0))) \wedge ((m1_subset_1 X2 (u1_struct_0 (k9_int_3 X0))) \wedge (m1_subset_1 X3 (k6_ec_pf_1 X0 X1 X2)))))) \Rightarrow (m1_subset_1 (k6_ec_pf_2 X0 X1 X2 X3) (u1_struct_0 (k9_int_3 X0))) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 (k9_int_3 X0))) \wedge (m1_subset_1 X2 (u1_struct_0 (k9_int_3 X0))))) \Rightarrow ((\neg v1_xboole_0 (k6_ec_pf_1 X0 X1 X2)) \wedge (m1_subset_1 (k6_ec_pf_1 X0 X1 X2) (k1_zfmisc_1 (k3_ec_pf_1 (k9_int_3 X0))))) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v7_ordinal1\ X0)\wedge \\ & (v1_int_2\ X0))\wedge((m1_subset_1\ X1\ (u1_struct_0\ (k9_int_3\ X0)))\wedge \\ & ((m1_subset_1\ X2\ (u1_struct_0\ (k9_int_3\ X0)))\wedge(m1_subset_1\ X3 \\ & (k6_ec_pf_1\ X0\ X1\ X2))))))\Rightarrow(m1_subset_1\ (k5_ec_pf_2\ X0\ X1\ X2\ X3) \\ & (u1_struct_0\ (k9_int_3\ X0))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v7_ordinal1\ X0)\wedge \\ & (v1_int_2\ X0))\wedge((m1_subset_1\ X1\ (u1_struct_0\ (k9_int_3\ X0)))\wedge \\ & ((m1_subset_1\ X2\ (u1_struct_0\ (k9_int_3\ X0)))\wedge(m1_subset_1\ X3 \\ & (k6_ec_pf_1\ X0\ X1\ X2))))))\Rightarrow(m1_subset_1\ (k4_ec_pf_2\ X0\ X1\ X2\ X3) \\ & (u1_struct_0\ (k9_int_3\ X0))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((\neg v6_struct_0\ X0)\wedge((v13_algstr_0 \\ & X0)\wedge((v33_algstr_0\ X0)\wedge((v3_group_1\ X0)\wedge((v5_group_1\ X0)\wedge(\\ & (v4_vectsp_1\ X0)\wedge((v5_vectsp_1\ X0)\wedge((v2_rlvect_1\ X0)\wedge((v3_rlvect_1 \\ & X0)\wedge((v4_rlvect_1\ X0)\wedge(l6_algstr_0\ X0))))))))))\Rightarrow((\neg v1_xboole_0 \\ & (k3_ec_pf_1\ X0))\wedge(m1_subset_1\ (k3_ec_pf_1\ X0)\ (k1_zfmisc_1\ (\\ & k3_zfmisc_1\ (u1_struct_0\ X0)\ (u1_struct_0\ X0)\ (u1_struct_0\ X0)))))) \end{aligned} \quad (21)$$

Assume the following.

$$\forall X0.((v7_ordinal1\ X0)\wedge(v1_int_2\ X0))\Rightarrow((\neg v1_xboole_0\ X0)\wedge((v7_ordinal1\ X0)\wedge(v1_int_2\ X0))) \quad (22)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(v1_xboole_0\ X1)) \quad (23)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v7_ordinal1\ X0)\wedge(v1_int_2\ X0))\Rightarrow(\forall X1.(m1_subset_1 \\ & X1\ (u1_struct_0\ (k9_int_3\ X0)))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (\\ & u1_struct_0\ (k9_int_3\ X0)))\Rightarrow(\forall X3.(m2_subset_1\ X3\ (k3_ec_pf_1 \\ & (k9_int_3\ X0)\ (k6_ec_pf_1\ X0\ X1\ X2))\Rightarrow(\forall X4.(m2_subset_1 \\ & X4\ (k3_zfmisc_1\ (u1_struct_0\ (k9_int_3\ X0)\ (u1_struct_0\ (k9_int_3 \\ & X0)\ (u1_struct_0\ (k9_int_3\ X0)))\ (k3_ec_pf_1\ (k9_int_3\ X0)))\Rightarrow \\ & ((X3 = X4)\Leftrightarrow((k4_ec_pf_2\ X0\ X1\ X2\ X3 = k1_mcart_1\ (u1_struct_0\ (k9_int_3 \\ & X0)\ (u1_struct_0\ (k9_int_3\ X0)\ (u1_struct_0\ (k9_int_3\ X0))\ X4)\wedge \\ & ((k5_ec_pf_2\ X0\ X1\ X2\ X3 = k2_mcart_1\ (u1_struct_0\ (k9_int_3\ X0)) \\ & (u1_struct_0\ (k9_int_3\ X0)\ (u1_struct_0\ (k9_int_3\ X0))\ X4)\wedge(\\ & k6_ec_pf_2\ X0\ X1\ X2\ X3 = k3_mcart_1\ (u1_struct_0\ (k9_int_3\ X0))\ (\\ & u1_struct_0\ (k9_int_3\ X0)\ (u1_struct_0\ (k9_int_3\ X0))\ X4))))))))) \end{aligned}$$