

l33_termord (TMKusCBHheTsTQRE3cPVDtju1eBek5Tic54)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_pre_poly : \iota \Rightarrow \iota$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $v4_relat_2 : \iota \Rightarrow o$ be given. Let $v6_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_valued_0 : \iota \Rightarrow o$ be given. Let $v2_pre_poly : \iota \Rightarrow o$ be given. Let $k3_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_pre_poly : \iota \Rightarrow \iota$ be given. Let $v3_polynom7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X1) \wedge (l1_struct_0 X1)) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k15_pre_poly \\ & X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k15_pre_poly X0) (u1_struct_0 X1)))))) \wedge ((v1_relat_1 X3) \wedge ((\\ & v4_relat_1 X3 X0) \wedge ((v1_funct_1 X3) \wedge ((v1_partfun1 X3 X0) \wedge ((v4_valued_0 \\ & X3) \wedge (v2_pre_poly X3)))))) \Rightarrow (k3_polynom1 X0 X1 X2 X3 = k1_funct_1 \\ & X2 X3) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. k15_pre_poly X0 = k14_pre_poly X0 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. ((v1_partfun1 X1 (k15_pre_poly \\ & X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 X1) \wedge ((v6_relat_2 X1) \wedge ((\\ & v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ & X0) (k15_pre_poly X0)))))))))) \Rightarrow (\forall X2. ((\neg v7_struct_0 X2) \wedge \\ & (l2_struct_0 X2)) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & X3 (k15_pre_poly X0) (u1_struct_0 X2)) \wedge ((v1_polynom1 X3 (k15_pre_poly \\ & X0) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ & X0) (u1_struct_0 X2)))))) \Rightarrow (k3_polynom1 X0 X2 (k5_termord X0 X1 \\ & X2 X3) (k3_termord X0 X1 X2 X3) = k3_polynom1 X0 X2 X3 (k3_termord X0 \\ & X1 X2 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \neg v1_xboole_0 (k14_pre_poly X0) \quad (6)$$

Assume the following.

$$\forall X0. (l2_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v3_ordinal1 X0) \wedge \\ & (((v1_partfun1 X1 (k15_pre_poly X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 \\ & X1) \wedge ((v6_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k15_pre_poly X0) (k15_pre_poly X0)))))))))) \wedge ((\\ & (\neg v2_struct_0 X2) \wedge (l2_struct_0 X2)) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & X3 (k15_pre_poly X0) (u1_struct_0 X2)) \wedge ((v1_polynom1 X3 (k15_pre_poly \\ & X0) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ & X0) (u1_struct_0 X2)))))) \Rightarrow ((v1_funct_1 (k5_termord X0 X1 \\ & X2 X3)) \wedge ((v1_funct_2 (k5_termord X0 X1 X2 X3) (k15_pre_poly X0) \\ & (u1_struct_0 X2)) \wedge ((v3_polynom7 (k5_termord X0 X1 X2 X3) X0 X2) \wedge \\ & (m1_subset_1 (k5_termord X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k15_pre_poly X0) (u1_struct_0 X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v3_ordinal1\ X0) \wedge \\ & (((v1_partfun1\ X1\ (k15_pre_poly\ X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly\ X0)))))))))) \wedge ((\\ & (\neg v2_struct_0\ X2) \wedge (l2_struct_0\ X2)) \wedge ((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly \\ & X0)\ X2) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\ & X0)\ (u1_struct_0\ X2)))))))))) \Rightarrow (m2_subset_1\ (k3_termord\ X0\ X1 \\ & X2\ X3)\ (k14_pre_poly\ X0)\ (k15_pre_poly\ X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0\ X0) \wedge ((l2_struct_0\ X1) \wedge ((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ X0\ (u1_struct_0\ X1)) \wedge (m1_subset_1 \\ & X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ (u1_struct_0\ X1)))))))) \Rightarrow (m1_subset_1 \\ & (k2_polynom1\ X0\ X1\ X2)\ (k1_zfmisc_1\ X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. m1_subset_1\ (k15_pre_poly\ X0)\ (k1_zfmisc_1\ (k14_pre_poly\ X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v3_ordinal1\ X0) \Rightarrow (\forall X1. ((v1_partfun1\ X1\ (k15_pre_poly \\ & X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\ & X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2. ((\neg v2_struct_0\ X2) \wedge \\ & (l2_struct_0\ X2)) \Rightarrow (\forall X3. ((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly \\ & X0)\ X2) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\ & X0)\ (u1_struct_0\ X2)))))))) \Rightarrow (k4_termord\ X0\ X1\ X2\ X3 = k3_polynom1 \\ & X0\ X2\ X3\ (k3_termord\ X0\ X1\ X2\ X3)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0\ X0) \Rightarrow (\forall X1. (l2_struct_0\ X1) \Rightarrow (\\ & \forall X2. ((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ X0\ (u1_struct_0\ X1)) \wedge \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ (u1_struct_0\ X1)))))) \Rightarrow \\ & (\forall X3. (m1_subset_1\ X3\ (k1_zfmisc_1\ X0)) \Rightarrow ((X3 = k2_polynom1 \\ & X0\ X1\ X2) \Leftrightarrow (\forall X4. (m1_subset_1\ X4\ X0) \Rightarrow ((X4 \in X3) \Leftrightarrow (k3_funct_2 \\ & X0\ (u1_struct_0\ X1)\ X2\ X4 \neq k4_struct_0\ X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1\ X1\ (k1_zfmisc_1\ (k15_pre_poly\ X0))) \Rightarrow (v4_funct_1\ X1) \quad (14)$$

Assume the following.

$$\forall X0.(v4_funct_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_relat_1 X1) \wedge (v1_funct_1 X1))) \quad (15)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((v2_struct_0 X0) \Rightarrow (v7_struct_0 X0)) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (k15_pre_poly X0)))) \Rightarrow (\forall X2.(m1_subset_1 X2 X1) \Rightarrow ((v1_partfun1 \\ X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly X2)))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k15_pre_poly X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 X1) \Rightarrow (v4_relat_1 X2 X0)) \quad (18)$$

Theorem 1

$$\begin{aligned} \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.((v1_partfun1 X1 (k15_pre_poly \\ X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 X1) \wedge ((v6_relat_2 X1) \wedge ((\\ v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ X0) (k15_pre_poly X0)))))))))) \Rightarrow (\forall X2.((\neg v7_struct_0 X2) \wedge \\ (l2_struct_0 X2)) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\ X3 (k15_pre_poly X0) (u1_struct_0 X2)) \wedge ((v1_polynom1 X3 (k15_pre_poly \\ X0) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ X0) (u1_struct_0 X2))))))) \Rightarrow ((k4_termord X0 X1 X2 X3 \neq k4_struct_0 \\ X2) \Rightarrow (k3_termord X0 X1 X2 X3 \in k2_polynom1 (k15_pre_poly X0) X2 (k5_termord \\ X0 X1 X2 X3)))))) \end{aligned}$$