

t37_polyred
(TMS8NsJFUbBfoS6sGaDCywWv2p3EqNRjfx8)

October 27, 2020

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 $v13_algstr_0 : \iota \Rightarrow o$ 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 $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ 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 $r6_polyred : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $r4_polyred : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r3_polyred : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_pre_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_polynom7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_polyred : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v3_ordinal1 X0) \wedge ((-v2_struct_0 X1) \wedge \\ & (l2_struct_0 X1))) \Rightarrow ((v1_funct_1 (k7_polynom1 X0 X1)) \wedge ((v1_funct_2 \\ & (k7_polynom1 X0 X1) (k15_pre_poly X0) (u1_struct_0 X1)) \wedge (v1_polynom1 \\ & (k7_polynom1 X0 X1) (k15_pre_poly X0) X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \tag{2}$$

Assume the following.

$$\forall X0.(l2_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (3)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l2_struct_0 X1)) \Rightarrow \\ & ((v1_funct_1 (k7_polynom1 X0 X1)) \wedge (v1_funct_2 (k7_polynom1 \\ & X0 X1) (k15_pre_poly X0) (u1_struct_0 X1)) \wedge (m1_subset_1 (k7_polynom1 \\ & X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly X0) (u1_struct_0 \\ & X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1. ((v1_partfun1 X1 (k15_pre_poly \\ & X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 X1) \wedge ((v6_relat_2 X1) \wedge ((\\ & v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ & X0) (k15_pre_poly X0)))))))))) \Rightarrow (\forall X2. ((\neg v7_struct_0 X2) \wedge \\ & ((v13_algstr_0 X2) \wedge ((v33_algstr_0 X2) \wedge ((v3_group_1 X2) \wedge ((v5_group_1 \\ & X2) \wedge ((v4_vectsp_1 X2) \wedge ((v5_vectsp_1 X2) \wedge ((v3_rlvect_1 X2) \wedge \\ & ((v4_rlvect_1 X2) \wedge (l6_algstr_0 X2)))))))))) \Rightarrow (\forall X3. ((\\ & v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k15_pre_poly X0) (u1_struct_0 \\ & X2)) \wedge ((v1_polynom1 X3 (k15_pre_poly X0) X2) \wedge (m1_subset_1 X3 (\\ & k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly X0) (u1_struct_0 X2)))))) \Rightarrow \\ & (\forall X4. ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k15_pre_poly X0) \\ & (u1_struct_0 X2)) \wedge ((v1_polynom1 X4 (k15_pre_poly X0) X2) \wedge (m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly X0) (u1_struct_0 X2)))))) \Rightarrow \\ & ((r6_polyred X0 X1 X2 X3 X4) \Leftrightarrow (\exists X5. ((v1_funct_1 X5) \wedge ((v1_funct_2 \\ & X5 (k15_pre_poly X0) (u1_struct_0 X2)) \wedge ((v1_polynom1 X5 (k15_pre_poly \\ & X0) X2) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ & X0) (u1_struct_0 X2)))))) \wedge (r4_polyred X0 X1 X2 X3 X4 X5)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& \quad X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\
& v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v7_struct_0\ X2) \wedge \\
& ((v13_algstr_0\ X2) \wedge ((v33_algstr_0\ X2) \wedge ((v3_group_1\ X2) \wedge ((v5_group_1 \\
& \quad X2) \wedge ((v4_vectsp_1\ X2) \wedge ((v5_vectsp_1\ X2) \wedge ((v3_rlvect_1\ X2) \wedge \\
& \quad ((v4_rlvect_1\ X2) \wedge (l6_algstr_0\ X2)))))))))) \Rightarrow (\forall X3.((\\
& \quad v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0 \\
& \quad X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1\ X3\ (\\
& \quad k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow \\
& \quad (\forall X4.((v1_funct_1\ X4) \wedge ((v1_funct_2\ X4\ (k15_pre_poly\ X0) \\
& (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X4\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1 \\
& \quad X4\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow \\
& \quad (\forall X5.((v1_funct_1\ X5) \wedge ((v1_funct_2\ X5\ (k15_pre_poly\ X0) \\
& (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X5\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1 \\
& \quad X5\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow \\
& \quad ((r4_polyred\ X0\ X1\ X2\ X3\ X4\ X5) \Leftrightarrow (\exists X6.((v1_relat_1\ X6) \wedge ((\\
& v4_relat_1\ X6\ X0) \wedge ((v1_funct_1\ X6) \wedge ((v1_partfun1\ X6\ X0) \wedge ((v4_valued_0 \\
& \quad X6) \wedge (v2_pre_poly\ X6)))))) \wedge (r3_polyred\ X0\ X1\ X2\ X3\ X4\ X5\ X6))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& \quad X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\
& \quad v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v7_struct_0\ X2) \wedge \\
& \quad ((v13_algstr_0\ X2) \wedge ((v33_algstr_0\ X2) \wedge ((v3_group_1\ X2) \wedge ((v5_group_1 \\
& \quad \quad X2) \wedge ((v4_vectsp_1\ X2) \wedge ((v5_vectsp_1\ X2) \wedge ((v3_rlvect_1\ X2) \wedge \\
& \quad \quad \quad ((v4_rlvect_1\ X2) \wedge (l6_algstr_0\ X2)))))))))) \Rightarrow (\forall X3.((\\
& \quad v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0 \\
& \quad \quad X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1\ X3\ (\\
& \quad \quad k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow \\
& \quad (\forall X4.((v1_funct_1\ X4) \wedge ((v1_funct_2\ X4\ (k15_pre_poly\ X0) \\
& \quad \quad (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X4\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1 \\
& \quad \quad X4\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow \\
& \quad (\forall X5.((v1_funct_1\ X5) \wedge ((v1_funct_2\ X5\ (k15_pre_poly\ X0) \\
& \quad \quad (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X5\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1 \\
& \quad \quad X5\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow \\
& \quad (\forall X6.((v1_relat_1\ X6) \wedge ((v4_relat_1\ X6\ X0) \wedge ((v1_funct_1 \\
& \quad \quad X6) \wedge ((v1_partfun1\ X6\ X0) \wedge ((v4_valued_0\ X6) \wedge (v2_pre_poly\ X6)))))) \Rightarrow \\
& \quad ((r3_polyred\ X0\ X1\ X2\ X3\ X4\ X5\ X6) \Leftrightarrow ((X3 \neq k7_polynom1\ X0\ X2) \wedge ((X4 \neq \\
& \quad k7_polynom1\ X0\ X2) \wedge ((X6 \in k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3) \wedge \\
& \quad \quad (\exists X7.((v1_relat_1\ X7) \wedge ((v4_relat_1\ X7\ X0) \wedge ((v1_funct_1 \\
& \quad \quad X7) \wedge ((v1_partfun1\ X7\ X0) \wedge ((v4_valued_0\ X7) \wedge (v2_pre_poly\ X7)))))) \wedge \\
& \quad \quad ((k11_pre_poly\ X0\ X7\ (k3_termord\ X0\ X1\ X2\ X4) = X6) \wedge (r2_funct_2\ (\\
& \quad \quad k15_pre_poly\ X0)\ (u1_struct_0\ X2)\ X5\ (k6_polynom1\ X0\ X2\ X3\ (k5_polynom7 \\
& \quad \quad X0\ X2\ (k1_polyred\ X0\ X7\ X2\ X4)\ (k3_vectsp_1\ X2\ (k3_polynom1\ X0\ X2\ X3 \\
& \quad \quad \quad X6)\ (k4_termord\ X0\ X1\ X2\ X4))))))))))))) \tag{8}
\end{aligned}$$

Assume the following.

$$\forall X0.(l1_struct_0\ X0) \Rightarrow ((v2_struct_0\ X0) \Rightarrow (v7_struct_0\ X0)) \tag{9}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& \quad X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\
& \quad v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v7_struct_0\ X2) \wedge \\
& \quad ((v13_algstr_0\ X2) \wedge ((v33_algstr_0\ X2) \wedge ((v3_group_1\ X2) \wedge ((v5_group_1 \\
& \quad \quad X2) \wedge ((v4_vectsp_1\ X2) \wedge ((v5_vectsp_1\ X2) \wedge ((v3_rlvect_1\ X2) \wedge \\
& \quad \quad \quad ((v4_rlvect_1\ X2) \wedge (l6_algstr_0\ X2)))))))))) \Rightarrow (\forall X3.((\\
& \quad v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0 \\
& \quad \quad X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1\ X3\ (\\
& \quad \quad k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow \\
& \quad (\neg r6_polyred\ X0\ X1\ X2\ (k7_polynom1\ X0\ X2)\ X3)))
\end{aligned}$$