

t28_polyred
(TMS4f4cdiHHFUHxAvc7XwVCEKQejQwKiAx)

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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 $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ 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 $r1_polyred : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $g1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $v16_waybel_0 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $k14_bagorder : \iota \Rightarrow \iota$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k13_bagorder : \iota \Rightarrow \iota$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge (l2_struct_0 X1)) \Rightarrow \\ & (\exists X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ & X0) (u1_struct_0 X1)))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 (k15_pre_poly \\ & X0)) \wedge ((v5_relat_1 X2 (u1_struct_0 X1)) \wedge ((v1_funct_1 X2) \wedge ((\neg \\ & v1_xboole_0 X2) \wedge ((v1_partfun1 X2 (k15_pre_poly X0)) \wedge ((v1_funct_2 \\ & X2 (k15_pre_poly X0) (u1_struct_0 X1)) \wedge (v1_polynom1 X2 (k15_pre_poly \\ & X0) X1)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& \quad X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\
& \quad v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad X0)\ (k15_pre_poly\ X0))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0\ X2) \wedge \\
& \quad (l2_struct_0\ X2)) \Rightarrow (\forall X3.((v1_funct_1\ X3) \wedge ((v1_funct_2 \\
& \quad X3\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly \\
& \quad \quad X0)\ X2) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad \quad X0)\ (u1_struct_0\ X2)))))) \Rightarrow (k2_polynom1\ (k15_pre_poly\ X0)\ X2 \\
& \quad X3 \in k5_finsub_1\ (u1_struct_0\ (g1_orders_2\ (k15_pre_poly\ X0)\ X1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1 \\
& \quad X0\ X0))) \Rightarrow (\forall X2.\forall X3.(g1_orders_2\ X0\ X1 = g1_orders_2 \\
& \quad \quad X2\ X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2 \\
& \quad X0) \wedge ((v5_orders_2\ X0) \wedge ((v16_waybel_0\ X0) \wedge (l1_orders_2\ X0)))))) \Rightarrow \\
& \quad ((\neg v2_struct_0\ (k14_bagorder\ X0)) \wedge ((v3_orders_2\ (k14_bagorder \\
& \quad \quad X0)) \wedge ((v4_orders_2\ (k14_bagorder\ X0)) \wedge (v5_orders_2\ (k14_bagorder \\
& \quad \quad \quad X0))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v4_relat_2\ X1) \wedge ((v1_partfun1\ X1\ X0) \wedge \\
& \quad (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X0)))))) \Rightarrow ((v1_orders_2 \\
& \quad (g1_orders_2\ X0\ X1)) \wedge (v5_orders_2\ (g1_orders_2\ X0\ X1)))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v8_relat_2\ X1) \wedge ((v1_partfun1\ X1\ X0) \wedge \\
& \quad (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X0)))))) \Rightarrow ((v1_orders_2 \\
& \quad (g1_orders_2\ X0\ X1)) \wedge (v4_orders_2\ (g1_orders_2\ X0\ X1)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_2\ X1) \wedge ((v1_partfun1\ X1\ X0) \wedge \\
& \quad (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X0)))))) \Rightarrow ((v1_orders_2 \\
& \quad (g1_orders_2\ X0\ X1)) \wedge (v3_orders_2\ (g1_orders_2\ X0\ X1)))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v3_ordinal1\ X0)\wedge((v1_partfun1\ X1\ (k15_pre_poly \\ X0))\wedge((v1_relat_2\ X1)\wedge((v4_relat_2\ X1)\wedge((v6_relat_2\ X1)\wedge((\\ v8_relat_2\ X1)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\ X0)\ (k15_pre_poly\ X0))))))))))\Rightarrow((v1_orders_2\ (g1_orders_2\ (\\ k15_pre_poly\ X0)\ X1))\wedge(v16_waybel_0\ (g1_orders_2\ (k15_pre_poly \\ X0)\ X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (k2_zfmisc_1\ X0\ X0))))\Rightarrow((\neg v2_struct_0\ (g1_orders_2\ X0\ X1))\wedge(\\ v1_orders_2\ (g1_orders_2\ X0\ X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v3_orders_2\ X0)\wedge((v4_orders_2 \\ X0)\wedge((v5_orders_2\ X0)\wedge((v16_waybel_0\ X0)\wedge(l1_orders_2\ X0))))))\Rightarrow \\ ((v3_orders_2\ (k14_bagorder\ X0))\wedge((v4_orders_2\ (k14_bagorder \\ X0))\wedge((v5_orders_2\ (k14_bagorder\ X0))\wedge(v16_waybel_0\ (k14_bagorder \\ X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(l2_algstr_0\ X0)\Rightarrow((l2_struct_0\ X0)\wedge(l1_algstr_0\ X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v3_orders_2\ X0)\wedge((v4_orders_2 \\ X0)\wedge((v5_orders_2\ X0)\wedge((v16_waybel_0\ X0)\wedge(l1_orders_2\ X0))))))\Rightarrow \\ ((v1_partfun1\ (k13_bagorder\ X0)\ (k5_finsub_1\ (u1_struct_0\ X0)))\wedge \\ ((v1_relat_2\ (k13_bagorder\ X0))\wedge((v4_relat_2\ (k13_bagorder \\ X0))\wedge((v8_relat_2\ (k13_bagorder\ X0))\wedge(m1_subset_1\ (k13_bagorder \\ X0)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k5_finsub_1\ (u1_struct_0\ X0)) \\ (k5_finsub_1\ (u1_struct_0\ X0)))))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ X0\ X0)))\Rightarrow((v1_orders_2\ (g1_orders_2\ X0\ X1))\wedge(l1_orders_2\ (g1_orders_2 \\ X0\ X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_orders_2\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0 \\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow((r1_orders_2 \\ X0\ X1\ X2)\Leftrightarrow(k4_tarski\ X1\ X2\ \in\ u1_orders_2\ X0)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& \quad X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\
& \quad v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad X0)\ (k15_pre_poly\ X0))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0\ X2) \wedge \\
& \quad (l2_struct_0\ X2)) \Rightarrow (\forall X3.((v1_funct_1\ X3) \wedge ((v1_funct_2 \\
& \quad X3\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly \\
& \quad \quad X0)\ X2) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad \quad X0)\ (u1_struct_0\ X2))))))))) \Rightarrow (\forall X4.((v1_funct_1\ X4) \wedge ((v1_funct_2 \\
& \quad X4\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X4\ (k15_pre_poly \\
& \quad \quad X0)\ X2) \wedge (m1_subset_1\ X4\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad \quad X0)\ (u1_struct_0\ X2))))))))) \Rightarrow ((r1_polyred\ X0\ X1\ X2\ X3\ X4) \Leftrightarrow (k4_tarski \\
& \quad (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3)\ (k2_polynom1\ (k15_pre_poly \\
& \quad \quad X0)\ X2\ X4) \in k13_bagorder\ (g1_orders_2\ (k15_pre_poly\ X0)\ X1))))))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge (l1_orders_2\ X0)) \Rightarrow ((v16_waybel_0 \\
& \quad X0) \Leftrightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1\ X2\ (u1_struct_0\ X0)) \Rightarrow ((r1_orders_2\ X0\ X1\ X2) \vee (r1_orders_2 \\
& \quad \quad X0\ X2\ X1))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2 \\
& \quad X0) \wedge ((v5_orders_2\ X0) \wedge ((v16_waybel_0\ X0) \wedge (l1_orders_2\ X0)))))) \Rightarrow \\
& \quad (k14_bagorder\ X0 = g1_orders_2\ (k5_finsub_1\ (u1_struct_0\ X0)) \\
& \quad \quad (k13_bagorder\ X0))
\end{aligned} \tag{18}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_xboole_0\ X0) \Rightarrow (\forall X1.((v1_relat_1\ X1) \wedge (v4_relat_1 \\
& \quad X1\ X0)) \Rightarrow ((v1_xboole_0\ X1) \wedge ((v1_relat_1\ X1) \wedge (v4_relat_1\ X1\ X0))))
\end{aligned} \tag{19}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_orders_2\ X0) \Rightarrow ((v1_orders_2\ X0) \Rightarrow (X0 = g1_orders_2 \\
& \quad (u1_struct_0\ X0)\ (u1_orders_2\ X0)))
\end{aligned} \tag{20}$$

Theorem 1

$$\begin{aligned} \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\ X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\ v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\ X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0\ X2) \wedge \\ (l2_algstr_0\ X2)) \Rightarrow (\forall X3.((v1_funct_1\ X3) \wedge ((v1_funct_2 \\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly \\ X0)\ X2) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\ X0)\ (u1_struct_0\ X2))))))) \Rightarrow (\forall X4.((v1_funct_1\ X4) \wedge ((v1_funct_2 \\ X4\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X4\ (k15_pre_poly \\ X0)\ X2) \wedge (m1_subset_1\ X4\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\ X0)\ (u1_struct_0\ X2))))))) \Rightarrow ((r1_polyred\ X0\ X1\ X2\ X3\ X4) \vee (r1_polyred \\ X0\ X1\ X2\ X4\ X3)))))) \end{aligned}$$