

t22_groeb_1 (TMSKpcRFCFqknGpExMccLZ- JABPi1YchVe4m)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ 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 $v2_bagorder : \iota \Rightarrow \iota \Rightarrow o$ 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 $v6_struct_0 : \iota \Rightarrow o$ 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 $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ 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 $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k11_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_groeb_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r11_polyred : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_ideal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_polyred : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r2_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_rewrite1 : \iota \Rightarrow o$ be given. Let $v4_rewrite1 : \iota \Rightarrow o$ be given. Let $r4_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_rewrite1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $k8_struct_0 : \iota \Rightarrow \iota$ be given. Let $r3_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_rewrite1 : \iota \Rightarrow o$ be given. Let $v8_rewrite1 : \iota \Rightarrow o$ be given. Let $v5_rewrite1 : \iota \Rightarrow o$ be given. Let $v7_rewrite1 : \iota \Rightarrow o$ be given. Assume the

following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly\ X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge ((v2_bagorder\ X1\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\\
& \quad \forall X2.((\neg v2_struct_0\ X2) \wedge ((\neg v6_struct_0\ X2) \wedge ((v13_algstr_0\ X2) \wedge ((v33_algstr_0\ X2) \wedge ((v3_group_1\ X2) \wedge ((v5_group_1\ X2) \wedge ((v4_vectsp_1\ X2) \wedge ((v5_vectsp_1\ X2) \wedge ((v2_rlvect_1\ X2) \wedge ((v3_rlvect_1\ X2) \wedge ((v4_rlvect_1\ X2) \wedge (l6_algstr_0\ X2)))))))))) \Rightarrow (\forall X3. \\
& \quad ((\neg v1_xboole_0\ X3) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ (k11_polynom1\ X0\ X2)))))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ (u1_struct_0\ (k11_polynom1\ X0\ X2))) \Rightarrow (\forall X5.(m1_subset_1\ X5\ (u1_struct_0\ (k11_polynom1\ X0\ X2))) \Rightarrow ((r11_polyred\ (k11_polynom1\ X0\ X2)\ (k7_ideal_1\ (k11_polynom1\ X0\ X2)\ X3)\ X4\ X5) \Rightarrow (r2_rewrite1\ (k3_polyred\ X0\ X1\ X2\ X3)\ X4\ X5))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly\ X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v7_struct_0\ X2) \wedge ((v13_algstr_0\ X2) \wedge ((v33_algstr_0\ X2) \wedge ((v3_group_1\ X2) \wedge ((v5_group_1\ X2) \wedge ((v4_vectsp_1\ X2) \wedge ((v5_vectsp_1\ X2) \wedge ((v2_rlvect_1\ X2) \wedge ((v3_rlvect_1\ X2) \wedge ((v4_rlvect_1\ X2) \wedge (l6_algstr_0\ X2)))))))))) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ (k11_polynom1\ X0\ X2)))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ (u1_struct_0\ (k11_polynom1\ X0\ X2))) \Rightarrow (\forall X5.(m1_subset_1\ X5\ (u1_struct_0\ (k11_polynom1\ X0\ X2))) \Rightarrow ((r2_rewrite1\ (k3_polyred\ X0\ X1\ X2\ X3)\ X4\ X5) \Rightarrow (r11_polyred\ (k11_polynom1\ X0\ X2)\ (k7_ideal_1\ (k11_polynom1\ X0\ X2)\ X3)\ X4\ X5))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1\ X0) \wedge ((v2_rewrite1\ X0) \wedge (v4_rewrite1\ X0))) \Rightarrow (\forall X1.\forall X2.(r2_rewrite1\ X0\ X1\ X2) \Rightarrow (k2_rewrite1\ X0\ X1 = k2_rewrite1\ X0\ X2))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1\ X0) \wedge ((v2_rewrite1\ X0) \wedge (v4_rewrite1\ X0))) \Rightarrow (\forall X1.r4_rewrite1\ X0\ X1\ (k2_rewrite1\ X0\ X1))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_relat_1\ X0) \Rightarrow (\forall X1.\forall X2.\forall X3. \\
& ((r2_rewrite1\ X0\ X1\ X2) \wedge (r2_rewrite1\ X0\ X2\ X3)) \Rightarrow (r2_rewrite1\ X0\ X1\ X3))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.\forall X2.(r1_rewrite1 X0 X1 X2) \Rightarrow ((r2_rewrite1 X0 X1 X2) \wedge (r2_rewrite1 X0 X2 X1))) \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \quad (8)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1 X0) \wedge \\ & (((v1_partfun1 X1 (k15_pre_poly X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 \\ & X1) \wedge ((v6_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge ((v2_bagorder X1 X0) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly X0) (\\ & k15_pre_poly X0)))))))))) \wedge ((\neg v2_struct_0 X2) \wedge ((\neg v6_struct_0 \\ & X2) \wedge ((v13_algstr_0 X2) \wedge ((v33_algstr_0 X2) \wedge ((v3_group_1 X2) \wedge \\ & ((v5_group_1 X2) \wedge ((v4_vectsp_1 X2) \wedge ((v5_vectsp_1 X2) \wedge ((v2_rlvect_1 \\ & X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge (l6_algstr_0 X2)))))))))) \wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 (k11_polynom1 X0 X2)))))) \Rightarrow \\ & (v3_rewrite1 (k3_polyred X0 X1 X2 X3)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((l4_algstr_0 X0) \wedge (l4_struct_0 X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3_ordinal1 X0) \wedge \\ & (((v1_partfun1 X1 (k15_pre_poly X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 \\ & X1) \wedge ((v6_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k15_pre_poly X0) (k15_pre_poly X0)))))))))) \wedge ((\\ & (\neg v7_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v33_algstr_0 X2) \wedge ((\\ & v3_group_1 X2) \wedge ((v5_group_1 X2) \wedge ((v4_vectsp_1 X2) \wedge ((v5_vectsp_1 \\ & X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge (l6_algstr_0 X2)))))))))) \wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 (k11_polynom1 X0 X2)))))) \Rightarrow \\ & (m1_subset_1 (k3_polyred X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k8_struct_0 (k11_polynom1 X0 X2)) (u1_struct_0 (k11_polynom1 \\ & X0 X2)))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.\forall X2.(r4_rewrite1 X0 X1 X2) \Leftrightarrow ((r3_rewrite1 X0 X2) \wedge (r1_rewrite1 X0 X1 X2))) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.((v1_partfun1 X1 (k15_pre_poly X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 X1) \wedge ((v6_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly X0) (k15_pre_poly X0)))))))))) \Rightarrow (\forall X2.((\neg v7_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v33_algstr_0 X2) \wedge ((v3_group_1 X2) \wedge ((v5_group_1 X2) \wedge ((v4_vectsp_1 X2) \wedge ((v5_vectsp_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge (l6_algstr_0 X2)))))))))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 (k11_polynom1 X0 X2)))) \Rightarrow ((r1_groeb_1 X0 X1 X2 X3) \Leftrightarrow (v9_rewrite1 (k3_polyred X0 X1 X2 X3)))))) \quad (15) \end{aligned}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v8_rewrite1 X0)) \Rightarrow ((v1_relat_1 X0) \wedge (v5_rewrite1 X0)) \quad (16)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (17)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v7_rewrite1 X0)) \Rightarrow ((v1_relat_1 X0) \wedge ((v8_rewrite1 X0) \wedge (v9_rewrite1 X0))) \quad (18)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v3_rewrite1 X0)) \Rightarrow ((v1_relat_1 X0) \wedge (v2_rewrite1 X0)) \quad (19)$$

Assume the following.

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v3_ordinal1 X1)) \quad (20)$$

Assume the following.

$$\forall X0.(l4_struct_0 X0) \Rightarrow ((\neg v6_struct_0 X0) \Rightarrow (\neg v7_struct_0 X0)) \quad (21)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_relat_1 X1)) \quad (22)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v3_rewrite1 X0) \wedge (v9_rewrite1 X0))) \Rightarrow ((v1_relat_1 X0) \wedge (v7_rewrite1 X0)) \quad (23)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v5_rewrite1 X0)) \Rightarrow ((v1_relat_1 X0) \wedge (v4_rewrite1 X0)) \quad (24)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.((v1_partfun1 \\ & X1 (k15_pre_poly X0) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 X1) \wedge ((v6_relat_2 \\ & X1) \wedge ((v8_relat_2 X1) \wedge ((v2_bagorder X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k15_pre_poly X0) (k15_pre_poly X0)))))))))) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0 X2) \wedge ((\neg v6_struct_0 X2) \wedge ((v13_algstr_0 \\ & X2) \wedge ((v33_algstr_0 X2) \wedge ((v3_group_1 X2) \wedge ((v5_group_1 X2) \wedge (\\ & (v4_vectsp_1 X2) \wedge ((v5_vectsp_1 X2) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 \\ & X2) \wedge ((v4_rlvect_1 X2) \wedge (l6_algstr_0 X2)))))))))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 (k11_polynom1 X0 X2))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 (k11_polynom1 X0 X2))) \Rightarrow (\forall X5. \\ & ((\neg v1_xboole_0 X5) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (u1_struct_0 \\ & (k11_polynom1 X0 X2)))))) \Rightarrow ((r1_groeb_1 X0 X1 X2 X5) \Rightarrow ((r11_polyred \\ & (k11_polynom1 X0 X2) (k7_ideal_1 (k11_polynom1 X0 X2) X5) X3 X4) \Leftrightarrow \\ & (k2_rewrite1 (k3_polyred X0 X1 X2 X5) X3 = k2_rewrite1 (k3_polyred \\ & X0 X1 X2 X5) X4)))))) \end{aligned}$$