

t27_genealg1 (TMUL- dUd9KmGgj2qdhap2NpPbpU92uHdA4cr)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $m1_genealg1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_card_3 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k5_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_numbers) \Rightarrow (\forall X3. \\ & ((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge ((v2_relat_1 X3) \wedge ((v1_funct_1 \\ & X3) \wedge (v1_finseq_1 X3)))))) \Rightarrow (\forall X4.(m1_genealg1 X4 X3) \Rightarrow (\forall X5. \\ & (m1_genealg1 X5 X3) \Rightarrow ((k9_genealg1 X3 X4 X5 X0 X1 X2 = k9_genealg1 \\ & X3 X4 X5 X1 X0 X2) \wedge (k9_genealg1 X3 X4 X5 X0 X1 X2 = k9_genealg1 X3 X4 X5 \\ & X0 X2 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.((\neg v1_xboole_0 \\ & X1) \wedge ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ & X1)))))) \Rightarrow (\forall X2.(m1_genealg1 X2 X1) \Rightarrow (\forall X3.(m1_genealg1 \\ & X3 X1) \Rightarrow (k8_genealg1 X1 X2 X3 X0 X0 = X2))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge (v1_finseq_1 X0)))))) \wedge ((m1_genealg1 X1 X0) \wedge ((m1_genealg1 \\ & X2 X0) \wedge ((m1_subset_1 X3 k5_numbers) \wedge ((m1_subset_1 X4 k5_numbers) \wedge \\ & (m1_subset_1 X5 k5_numbers)))))) \Rightarrow (k9_genealg1 X0 X1 X2 X3 X4 X5 = \\ & k3_genealg1 X0 X1 X2 X3 X4 X5) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1_xboole_0 \\ & X0)\wedge((v1_relat_1 X0)\wedge((v2_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 \\ & X0))))))\wedge((m1_genealg1 X1 X0)\wedge((m1_genealg1 X2 X0)\wedge((m1_subset_1 \\ & X3 k5_numbers)\wedge(m1_subset_1 X4 k5_numbers))))))\Rightarrow(k8_genealg1 \\ & X0 X1 X2 X3 X4 = k2_genealg1 X0 X1 X2 X3 X4) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0)\wedge((v1_relat_1 X0)\wedge((v2_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 \\ & X0))))))\wedge((m1_genealg1 X1 X0)\wedge((m1_genealg1 X2 X0)\wedge(m1_subset_1 \\ & X3 k5_numbers))))\Rightarrow(k7_genealg1 X0 X1 X2 X3 = k1_genealg1 X0 X1 X2 \\ & X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge((v2_relat_1 \\ & X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0))))))\Rightarrow(\forall X1.(m1_genealg1 \\ & X1 X0)\Rightarrow(m2_finseq_1 X1 (k3_card_3 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge((v2_relat_1 \\ & X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0))))))\Rightarrow(\forall X1.(m2_finseq_1 \\ & X1 (k3_card_3 X0))\Rightarrow(\forall X2.(m2_finseq_1 X2 (k3_card_3 X0))\Rightarrow \\ & (\forall X3.(m1_subset_1 X3 k5_numbers)\Rightarrow(\forall X4.(m1_subset_1 \\ & X4 k5_numbers)\Rightarrow(\forall X5.(m1_subset_1 X5 k5_numbers)\Rightarrow(k3_genealg1 \\ & X0 X1 X2 X3 X4 X5 = k1_genealg1 X0 (k2_genealg1 X0 X1 X2 X3 X4) (k2_genealg1 \\ & X0 X2 X1 X3 X4) X5)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers)\Rightarrow(\forall X1.(m1_subset_1 \\ & X1 k5_numbers)\Rightarrow(\forall X2.(m1_subset_1 X2 k5_numbers)\Rightarrow(\forall X3. \\ & ((\neg v1_xboole_0 X3)\wedge((v1_relat_1 X3)\wedge((v2_relat_1 X3)\wedge((v1_funct_1 \\ & X3)\wedge(v1_finseq_1 X3))))))\Rightarrow(\forall X4.(m1_genealg1 X4 X3)\Rightarrow(\forall X5. \\ & (m1_genealg1 X5 X3)\Rightarrow((k9_genealg1 X3 X4 X5 X0 X0 X1 = k7_genealg1 \\ & X3 X4 X5 X1)\wedge((k9_genealg1 X3 X4 X5 X0 X2 X0 = k7_genealg1 X3 X4 X5 X2)\wedge \\ & (k9_genealg1 X3 X4 X5 X0 X2 X2 = k7_genealg1 X3 X4 X5 X0)))))) \end{aligned}$$