

t19_genealg1 (TM- LLm1wvHJBRHACXopYGFyZnfMirLUcuD8c)

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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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k9_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_card_3 : \iota \Rightarrow \iota$ be given. Let $k1_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & \quad X1 k5_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_numbers) \Rightarrow (\forall X3. \\ & \quad ((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge ((v2_relat_1 X3) \wedge ((v1_funct_1 \\ & \quad X3) \wedge (v1_finseq_1 X3)))))) \Rightarrow (\forall X4.(m1_genealg1 X4 X3) \Rightarrow (\forall X5. \\ & \quad (m1_genealg1 X5 X3) \Rightarrow ((r1_xxreal_0 (k3_finseq_1 X4) X0) \Rightarrow (k9_genealg1 \\ & \quad X3 X4 X5 X0 X1 X2 = k8_genealg1 X3 X4 X5 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & \quad X1 k5_numbers) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_relat_1 \\ & \quad X2) \wedge ((v2_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2)))))) \Rightarrow \\ & \quad (\forall X3.(m1_genealg1 X3 X2) \Rightarrow (\forall X4.(m1_genealg1 X4 X2) \Rightarrow \\ & \quad (k8_genealg1 X2 X3 X4 X0 X1 = k8_genealg1 X2 X3 X4 X1 X0)))) \end{aligned} \quad (2)$$

Assume the following.

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

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.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v2_relat_1 \\ & X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0)))))) \Rightarrow (\forall X1. (m1_genealg1 \\ & X1 X0) \Rightarrow (m2_finseq_1 X1 (k3_card_3 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v2_relat_1 \\ & X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0)))))) \Rightarrow (\forall X1. (m2_finseq_1 \\ & X1 (k3_card_3 X0)) \Rightarrow (\forall X2. (m2_finseq_1 X2 (k3_card_3 X0)) \Rightarrow \\ & (\forall X3. (m1_subset_1 X3 k5_numbers) \Rightarrow (\forall X4. (m1_subset_1 \\ & X4 k5_numbers) \Rightarrow (\forall X5. (m1_subset_1 X5 k5_numbers) \Rightarrow (k3_genealg1 \\ & X0 X1 X2 X3 X4 X5 = k1_genealg1 X0 (k2_genealg1 X0 X1 X2 X3 X4) (k2_genealg1 \\ & X0 X2 X1 X3 X4) X5)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v2_relat_1 \\ & X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0)))))) \Rightarrow (\forall X1. (m2_finseq_1 \\ & X1 (k3_card_3 X0)) \Rightarrow ((m1_genealg1 X1 X0) \Leftrightarrow ((k3_finseq_1 X1 = k3_finseq_1 \\ & X0) \wedge (\forall X2. (m1_subset_1 X2 k5_numbers) \Rightarrow ((X2 \in k4_finseq_1 \\ & X1) \Rightarrow (k1_funct_1 X1 X2 \in k1_funct_1 X0 X2)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1. (m1_subset_1 \\ & X1 k5_numbers) \Rightarrow (\forall X2. (m1_subset_1 X2 k5_numbers) \Rightarrow (\forall X3. \\ & ((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge ((v2_relat_1 X3) \wedge ((v1_funct_1 \\ & X3) \wedge (v1_finseq_1 X3)))))) \Rightarrow (\forall X4. (m1_genealg1 X4 X3) \Rightarrow (\forall X5. \\ & (m1_genealg1 X5 X3) \Rightarrow ((r1_xxreal_0 (k3_finseq_1 X4) X0) \Rightarrow (k9_genealg1 \\ & X3 X4 X5 X1 X0 X2 = k8_genealg1 X3 X4 X5 X1 X2)))))) \end{aligned}$$