

t23_group_1 (TMG-
pjk863FYnAJ4swEugFnmtiuYdbLL3GMz)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_int_2 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v8_struct_0 : \iota \Rightarrow o$ be given. Let $v2_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_group_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_group_10 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_group_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_int_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_nat_d : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_group_1 : \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k7_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_group_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \Rightarrow (\forall X1.(v7_ordinal1 \\ X1) \Rightarrow (\forall X2.(v7_ordinal1 X2) \Rightarrow (\neg(r1_int_1 X1 (k1_newton X0 \\ X2)) \wedge (\forall X3.(v7_ordinal1 X3) \Rightarrow (\neg(X1 = k1_newton X0 X3) \wedge (r1_xxreal_0 \\ X3 X2))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v8_struct_0 X0) \wedge ((v2_group_1 \\ X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))))) \Rightarrow (\forall X1.(m1_group_2 \\ X1 X0) \Rightarrow (r1_nat_d (k7_group_1 X1) (k7_group_1 X0))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.((v7_ordinal1 X0) \wedge (v7_ordinal1 X1)) \Rightarrow (\\ (r1_nat_d X0 X1) \Leftrightarrow (r1_int_1 X0 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (k7_group_1 \\ X0 = k7_struct_0 X0) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.(((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \wedge ((\neg \\ v2_struct_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 X1) \wedge (l3_algstr_0 \\ X1)))))) \Rightarrow (k2_group_1 X0 X1 = k1_group_1 X0 X1) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.((v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow ((v7_ordinal1 (k7_struct_0 X0)) \wedge (v1_card_1 (k7_struct_0 X0))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge (l3_algstr_0 X0))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow ((\neg v2_struct_0 X1) \wedge ((v2_group_1 X1) \wedge (l3_algstr_0 X1)))) \quad (7)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0) \Rightarrow (l1_struct_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \wedge ((\neg v2_struct_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 X1) \wedge (l3_algstr_0 X1))))) \Rightarrow (v7_ordinal1 (k1_group_1 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 X1) \wedge (l3_algstr_0 X1))))) \Rightarrow ((v2_group_10 X1 X0) \Rightarrow (\forall X2.(v7_ordinal1 X2) \Rightarrow ((X2 = k1_group_1 X0 X1) \Leftrightarrow (k7_struct_0 X1 = k1_newton X0 X2)))) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v8_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0))))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow (v8_struct_0 X1)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \wedge ((\neg v2_struct_0 X1) \wedge ((v8_struct_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 X1) \wedge ((v2_group_10 X1 X0) \wedge (l3_algstr_0 X1))))) \Rightarrow (\forall X2.(m1_group_2 X2 X1) \Rightarrow (v2_group_10 X2 X0)) \quad (12)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow (v3_group_1 X1)) \quad (13)$$

Theorem 1

$$\forall X0.((v7_ordinal1 X0) \wedge (v1_int_2 X0)) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v8_struct_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 X1) \wedge (l3_algstr_0 X1))))) \Rightarrow (\forall X2.(m1_group_2 X2 X1) \Rightarrow ((v2_group_10 X1 X0) \Rightarrow (r1_xreal_0 (k2_group_1 X0 X2) (k2_group_1 X0 X1))))$$