

t10_goboard9 (TMHUDawVp gmAHxmwqumzp- GrCYKLPaMW57N5)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $v1_topreal1 : \iota \Rightarrow o$ be given. Let $v2_topreal1 : \iota \Rightarrow o$ be given. Let $v1_goboard5 : \iota \Rightarrow o$ be given. Let $v2_goboard5 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k5_goboard5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_goboard9 : \iota \Rightarrow \iota$ be given. Let $k4_goboard5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_5 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((\neg v3_funct_1 X0) \wedge ((v1_finseq_6 \\ & X0 (u1_struct_0 (k15_euclid np_2))) \wedge ((v1_topreal1 X0) \wedge ((v2_topreal1 \\ & X0) \wedge ((v1_goboard5 X0) \wedge ((v2_goboard5 X0) \wedge (m2_finseq_1 X0 (u1_struct_0 \\ & (k15_euclid np_2)))))))))) \Rightarrow (\forall X1. (m2_subset_1 X1 k1_numbers \\ & k5_numbers) \Rightarrow (\forall X2. (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\ & (((r1_xxreal_0 np_1 X1) \wedge ((r1_xxreal_0 np_1 X2) \wedge (k2_nat_1 X1 \\ & X2 = k3_finseq_1 X0))) \Rightarrow (k5_goboard5 X0 X1 = k4_goboard5 (k1_goboard9 \\ & X0) X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_finseq_6 X0 (u1_struct_0 \\ & (k15_euclid np_2))) \wedge ((v1_topreal1 X0) \wedge ((v2_topreal1 X0) \wedge (\\ & (v1_goboard5 X0) \wedge ((v2_goboard5 X0) \wedge (m1_finseq_1 X0 (u1_struct_0 \\ & (k15_euclid np_2)))))))))) \Rightarrow (k1_goboard9 X0 = k3_finseq_5 X0) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_finseq_6 X0 (u1_struct_0 \\ (k15_euclid np_2))) \wedge ((v1_topreal1 X0) \wedge ((v2_topreal1 X0) \wedge \\ (v1_goboard5 X0) \wedge ((v2_goboard5 X0) \wedge (m1_finseq_1 X0 (u1_struct_0 \\ (k15_euclid np_2)))))))))) \Rightarrow (k1_goboard9 (k1_goboard9 X0) = X0) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((\neg v3_funct_1 \\ X0) \wedge (v1_finseq_1 X0)))) \Rightarrow ((v1_relat_1 (k3_finseq_5 X0)) \wedge ((v1_funct_1 \\ (k3_finseq_5 X0)) \wedge ((\neg v3_funct_1 (k3_finseq_5 X0)) \wedge (v1_finseq_1 \\ (k3_finseq_5 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 X1) \wedge (v1_finseq_1 X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ ((v1_relat_1 (k3_finseq_5 X0)) \wedge ((v1_funct_1 (k3_finseq_5 X0)) \wedge \\ (v1_finseq_1 (k3_finseq_5 X0)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_finseq_6 X0 (u1_struct_0 \\ (k15_euclid np_2))) \wedge ((v1_topreal1 X0) \wedge ((v2_topreal1 X0) \wedge \\ (v1_goboard5 X0) \wedge ((v2_goboard5 X0) \wedge (m1_finseq_1 X0 (u1_struct_0 \\ (k15_euclid np_2)))))))))) \Rightarrow ((\neg v1_xboole_0 (k1_goboard9 X0)) \wedge \\ ((v1_finseq_6 (k1_goboard9 X0) (u1_struct_0 (k15_euclid np_2))) \wedge \\ ((v1_topreal1 (k1_goboard9 X0)) \wedge ((v2_topreal1 (k1_goboard9 \\ X0)) \wedge ((v1_goboard5 (k1_goboard9 X0)) \wedge ((v2_goboard5 (k1_goboard9 \\ X0)) \wedge (m2_finseq_1 (k1_goboard9 X0) (u1_struct_0 (k15_euclid \\ np_2)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ X1))) \Rightarrow ((X1 = k3_finseq_5 X0) \Leftrightarrow ((k3_finseq_1 X1 = k3_finseq_1 X0) \wedge \\ (\forall X2.(v7_ordinal1 X2) \Rightarrow ((X2 \in k4_finseq_1 X1) \Rightarrow (k1_funct_1 \\ X1 X2 = k1_funct_1 X0 (k2_xcmplx_0 (k6_xcmplx_0 (k3_finseq_1 X0) \\ X2) np_1))))))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (\neg v3_funct_1 X0) \wedge (v1_finseq_6 \\ & X0 (u1_struct_0 (k15_euclid np_2))) \wedge (v1_topreal1 X0) \wedge (v2_topreal1 \\ & X0) \wedge ((v1_goboard5 X0) \wedge (v2_goboard5 X0) \wedge (m2_finseq_1 X0 (u1_struct_0 \\ & (k15_euclid np_2)))))) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers \\ & k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\ & ((r1_xxreal_0 np_1 X1) \wedge (r1_xxreal_0 np_1 X2) \wedge (k2_nat_1 X1 \\ & X2 = k3_finseq_1 X0))) \Rightarrow (k5_goboard5 (k1_goboard9 X0) X1 = k4_goboard5 \\ & X0 X2))) \end{aligned}$$