

t36_graphsp
(TMR4yruzuvGXwQNaJkeLS2fWURmPf3Jzc9a)

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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 $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_graphsp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_graphsp : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_graphsp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $r1_graphsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_nat_d : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k17_graphsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_finseq_2 X1 X0) \Rightarrow (\forall X2. (m2_finseq_2 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (3)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (4)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (5)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (6)$$

Assume the following.

$$\forall X0.m1_finseq_2 \ (k3_finseq_2 \ X0) \ X0 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 \ X0 \ k5_numbers) \Rightarrow & (m2_funct_2 \ (k19_graphsp \\ X0) \ (k3_finseq_2 \ k1_numbers) \ (k3_finseq_2 \ k1_numbers) \ (k9_funct_2 \\ & (k3_finseq_2 \ k1_numbers) \ (k3_finseq_2 \ k1_numbers))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 \ X0 \ (k3_finseq_2 \ k1_numbers)) \wedge \\ (m1_subset_1 \ X1 \ k5_numbers)) \Rightarrow & (m2_finseq_2 \ (k18_graphsp \ X0 \ X1) \\ & k1_numbers \ (k3_finseq_2 \ k1_numbers)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2_subset_1 \ X0 \ k1_numbers \ k5_numbers) \Rightarrow & (\forall X1. \\ (m2_funct_2 \ X1 \ (k3_finseq_2 \ k1_numbers) \ (k3_finseq_2 \ k1_numbers) \\ (k9_funct_2 \ (k3_finseq_2 \ k1_numbers) \ (k3_finseq_2 \ k1_numbers))) \Rightarrow \\ ((X1 = k19_graphsp \ X0) \Leftrightarrow & ((k9_xtuple_0 \ X1 = k3_finseq_2 \ k1_numbers) \wedge \\ (\forall X2.(m2_finseq_2 \ X2 \ k1_numbers \ (k3_finseq_2 \ k1_numbers)) \Rightarrow \\ & (k6_graphsp \ X1 \ X2 = k18_graphsp \ X2 \ X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2_finseq_2 \ X0 \ k1_numbers \ (k3_finseq_2 \ k1_numbers)) \Rightarrow \\ (\forall X1.(m2_subset_1 \ X1 \ k1_numbers \ k5_numbers) \Rightarrow & (\forall X2. \\ (m2_finseq_2 \ X2 \ k1_numbers \ (k3_finseq_2 \ k1_numbers)) \Rightarrow & ((X2 = k18_graphsp \\ X0 \ X1) \Leftrightarrow & ((k4_finseq_1 \ X2 = k4_finseq_1 \ X0) \wedge (\forall X3.(m2_subset_1 \\ X3 \ k1_numbers \ k5_numbers) \Rightarrow & ((X3 \in k4_finseq_1 \ X0) \Rightarrow (((r1_xxreal_0 \\ X3 \ (k4_nat_1 \ np_2 \ X1)) \Rightarrow & ((r1_xxreal_0 \ X3 \ X1) \vee ((r1_graphsp \ X1 \\ (k7_nat_d \ X3 \ X1) \ X0) \Rightarrow & (k1_seq_1 \ X2 \ X3 = k7_partfun1 \ k1_numbers \ X0 \\ (k2_nat_1 \ (k2_nat_1 \ (k4_nat_1 \ X1 \ X1) \ (k4_nat_1 \ np_3 \ X1)) \ np_1))) \wedge \\ ((\neg r1_graphsp \ X1 \ (k7_nat_d \ X3 \ X1) \ X0) \Rightarrow & (k1_seq_1 \ X2 \ X3 = k1_seq_1 \\ X0 \ X3)))))) \wedge & (((r1_xxreal_0 \ X3 \ (k4_nat_1 \ np_3 \ X1)) \Rightarrow ((r1_xxreal_0 \\ X3 \ (k4_nat_1 \ np_2 \ X1)) \vee & ((r1_graphsp \ X1 \ (k7_nat_d \ X3 \ (k4_nat_1 \\ np_2 \ X1)) \ X0) \Rightarrow & (k1_seq_1 \ X2 \ X3 = k17_graphsp \ X0 \ X1 \ (k7_nat_d \ X3 \ (k4_nat_1 \\ np_2 \ X1)))))) \wedge & ((\neg r1_graphsp \ X1 \ (k7_nat_d \ X3 \ (k4_nat_1 \ np_2 \ X1)) \\ X0) \Rightarrow & (k1_seq_1 \ X2 \ X3 = k1_seq_1 \ X0 \ X3)))))) \wedge ((\neg(\neg r1_xxreal_0 \ X3 \ X1) \wedge \\ (r1_xxreal_0 \ X3 \ (k4_nat_1 \ np_3 \ X1)) \Rightarrow & (k1_seq_1 \ X2 \ X3 = k1_seq_1 \\ X0 \ X3))))))))) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_finseq_2 \\ & X2 k1_numbers (k3_finseq_2 k1_numbers) \Rightarrow ((X0 \in k4_finseq_1 X2) \Rightarrow \\ & ((\neg r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X0 (k4_nat_1 np_3 X1))) \vee \\ & (k1_seq_1 (k6_graphsp (k19_graphsp X1) X2) X0 = k1_seq_1 X2 X0)))))) \end{aligned}$$