

t33_graph_5

(TMR3Yysq2tHNh64wfy3RdLCWdZd38iLwPeH)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v7_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_graph_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k7_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_graph_4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ 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 $m1_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & (\forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1)))) \Rightarrow (k3_finseq_1 (k7_finseq_1 X0 X1) = k2_nat_1 (k3_finseq_1 X0) (k3_finseq_1 X1))) \quad (2) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m2_finseq_1 X1 (u4_struct_0 X0)) \Rightarrow ((k3_finseq_1 X1 = np_1) \Rightarrow (v7_graph_1 X1 X0) \wedge ((v1_graph_4 X1 X0) \wedge (m2_graph_1 X1 X0)))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)) \Rightarrow (\forall X2.((v7_graph_1 \\ & X2 X0) \wedge (m2_graph_1 X2 X0)) \Rightarrow ((k1_funct_1 (u2_graph_1 X0) (k1_funct_1 \\ & X1 (k3_finseq_1 X1)) = k1_funct_1 (u1_graph_1 X0) (k1_funct_1 X2 \\ & np_1)) \Rightarrow ((v7_graph_1 (k8_finseq_1 (u4_struct_0 X0) X1 X2) X0) \wedge \\ & (m2_graph_1 (k8_finseq_1 (u4_struct_0 X0) X1 X2) X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$r1_xreal_0 np_1 np_1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m2_graph_1 X1 X0) \Leftrightarrow (m1_graph_1 X1 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_finseq_1 X1 X0) \wedge (m1_finseq_1 \\ & X2 X0)) \Rightarrow (k8_finseq_1 X0 X1 X2 = k7_finseq_1 X1 X2) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1. ((v1_relat_1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow (((r1_xreal_0 np_1 \\ & X0) \wedge (r1_xreal_0 X0 (k3_finseq_1 X1))) \Rightarrow (k1_funct_1 X1 X0 = k1_funct_1 \\ & (k7_finseq_1 X2 X1) (k2_nat_1 (k3_finseq_1 X2) X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1. ((v1_relat_1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow (((r1_xreal_0 np_1 \\ & X0) \wedge (r1_xreal_0 X0 (k3_finseq_1 X1))) \Rightarrow (k1_funct_1 X1 X0 = k1_funct_1 \\ & (k7_finseq_1 X1 X2) X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (&((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 \\ &X0))) \wedge ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge ((\neg v1_xboole_0 X1) \wedge \\ &(v1_finseq_1 X1)))))) \Rightarrow ((v1_relat_1 (k7_finseq_1 X1 X0)) \wedge ((v1_funct_1 \\ &(k7_finseq_1 X1 X0)) \wedge ((\neg v1_xboole_0 (k7_finseq_1 X1 X0)) \wedge (v1_finseq_1 \\ &(k7_finseq_1 X1 X0)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ &(m2_graph_1 X1 X0) \Rightarrow (m2_finseq_1 X1 (u4_struct_0 X0))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m2_finseq_1 X1 X0) \Rightarrow ((v1_funct_1 X1) \wedge (\\ &(v1_finseq_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\ &X0)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ &(m1_graph_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ &X1)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1_finseq_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge (\\ &(v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ &((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ &X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 \\ &X0)) \Rightarrow ((r1_graph_5 X0 X1 X2 X3) \Leftrightarrow ((X1 \neq k1_xboole_0) \wedge ((k1_funct_1 \\ &(u1_graph_1 X0) (k1_funct_1 X1 np_1) = X2) \wedge (k1_funct_1 (u2_graph_1 \\ &X0) (k1_funct_1 X1 (k3_finseq_1 X1)) = X3))))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ &(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\ &(u1_struct_0 X0)) \Rightarrow (\forall X3. (r1_graph_4 X0 X1 X2 X3) \Leftrightarrow ((k1_funct_1 \\ &(u1_graph_1 X0) X3 = X1) \wedge (k1_funct_1 (u2_graph_1 X0) X3 = X2)))))) \end{aligned} \quad (19)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m2_finseq_1 X1 (u4_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5.((\\ & v7_graph_1 X5 X0) \wedge (m2_graph_1 X5 X0)) \Rightarrow (\neg(r1_xxreal_0 np_1 (k3_finseq_1 \\ & X5)) \wedge ((r1_graph_5 X0 X5 X2 X3) \wedge ((r1_graph_4 X0 X3 X4 (k1_funct_1 \\ & X1 np_1)) \wedge ((k3_finseq_1 X1 = np_1) \wedge (\forall X6.((v7_graph_1 \\ & X6 X0) \wedge (m2_graph_1 X6 X0)) \Rightarrow (\neg(X6 = k8_finseq_1 (u4_struct_0 X0) \\ & X5 X1) \wedge (r1_graph_5 X0 X6 X2 X4))))))))))))) \end{aligned}$$