

t13_graph_5

(TMYviXv3UyYd9z6F3MZG9xPww8kgjad1XHN)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $v7_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_graph_4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_graph_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v3_graph_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ 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 $v2_funct_1 : \iota \Rightarrow o$ be given. Let $v2_finseq_1 : \iota \Rightarrow o$ be given. Let $m1_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m2_finseq_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m2_graph_1 X2 \\ & X0) \Rightarrow (\neg(r1_graph_2 X0 X1 X2) \wedge (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\ & X2)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 X1)) \Rightarrow (\forall X5. \\ & ((v3_graph_2 X5 X0) \wedge (m2_graph_1 X5 X0)) \Rightarrow (\forall X6.(m2_finseq_1 \\ & X6 (u1_struct_0 X0)) \Rightarrow (\neg(k15_finseq_1 X3 = X5) \wedge ((k15_finseq_1 \\ & X4 = X6) \wedge ((r1_graph_2 X0 X6 X5) \wedge ((k1_funct_1 X1 np_1 = k1_funct_1 \\ & X6 np_1) \wedge (k1_funct_1 X1 (k3_finseq_1 X1) = k1_funct_1 X6 (k3_finseq_1 \\ & X6))))))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (((v7_graph_1 \\ & X1 X0) \wedge ((v1_graph_4 X1 X0) \wedge (m2_graph_1 X1 X0))) \Rightarrow ((v7_graph_1 \\ & X1 X0) \wedge ((v3_graph_2 X1 X0) \wedge (m2_graph_1 X1 X0)))) \wedge (((v7_graph_1 \\ & X1 X0) \wedge ((v3_graph_2 X1 X0) \wedge (m2_graph_1 X1 X0))) \Rightarrow ((v7_graph_1 \\ & X1 X0) \wedge ((v1_graph_4 X1 X0) \wedge (m2_graph_1 X1 X0)))) \wedge (((v7_graph_1 \\ & X1 X0) \wedge ((v3_graph_2 X1 X0) \wedge (m2_graph_1 X1 X0))) \Rightarrow ((v2_funct_1 \\ & X1) \wedge ((v7_graph_1 X1 X0) \wedge (m2_graph_1 X1 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (m2_graph_1 k1_xboole_0 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_finseq_1 X0))) \Rightarrow \\ & (((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (k15_finseq_1 \\ & X0 = X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m2_graph_1 X1 X0) \Leftrightarrow (m1_graph_1 X1 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\exists X1. \\ & (m1_graph_1 X1 X0) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u4_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge ((v1_xboole_0 \\ & X1) \wedge ((v1_finset_1 X1) \wedge ((v1_finseq_1 X1) \wedge (v2_finseq_1 X1)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (m1_graph_1 k1_xboole_0 X0) \quad (8)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m1_graph_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ & X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow ((m1_graph_1 \\ & X1 X0) \Leftrightarrow ((m2_finseq_1 X1 (u4_struct_0 X0)) \wedge (\exists X2.(m2_finseq_1 \\ & X2 (u1_struct_0 X0)) \wedge (r1_graph_2 X0 X2 X1)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_finseq_1 X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (v1_xboole_0 X1)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m1_graph_1 X1 X0) \Rightarrow ((v1_xboole_0 X1) \Rightarrow (v7_graph_1 X1 X0))) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow ((v7_graph_1 \\ & k1_xboole_0 X0) \wedge ((v1_graph_4 k1_xboole_0 X0) \wedge (m2_graph_1 k1_xboole_0 \\ & X0))) \end{aligned}$$