

t22_graph_2

(TMHveFSs98vBXJTu57b9MjE9RoQDHCYWnfg)

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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 $v1_graph_2 : \iota \Rightarrow o$ be given. Let $v2_graph_2 : \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ 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 $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 \\ & X0) \wedge ((v1_graph_2 X0) \wedge (v2_graph_2 X0)))) \Rightarrow (\forall X1.((v1_relat_1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge ((v1_finseq_1 X1) \wedge ((v1_graph_2 X1) \wedge (v2_graph_2 \\ & X1)))))) \Rightarrow (((k3_finseq_1 X0 = k3_finseq_1 X1) \wedge (k10_xtuple_0 X0 = \\ & k10_xtuple_0 X1)) \Rightarrow ((X0 = X1) \vee (\forall X2.(m2_subset_1 X2 k1_numbers \\ & k5_numbers) \Rightarrow (\neg(r1_xxreal_0 np_1 X2) \wedge ((r1_xxreal_0 X2 (k3_finseq_1 \\ & X0)) \wedge (k1_funct_1 X0 X2 = k1_funct_1 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & ((v1_graph_2 X0) \Leftrightarrow ((\neg r1_xxreal_0 (k3_finseq_1 X0) np_1) \wedge (\exists X1. \\ & \exists X2.(X1 \neq X2) \wedge (k10_xtuple_0 X0 = k2_tarski X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & (k3_finseq_1 X0 = k1_card_1 X0) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (k2_finseq_1 X0 = k1_finseq_1 X0) \quad (4)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow ((v1_finset_1 (k1_card_1 X0)) \wedge (v1_card_1 (k1_card_1 X0))) \quad (5)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (m2_subset_1 (k3_finseq_1 X0) k1_numbers k5_numbers) \quad (6)$$

Assume the following.

$$\forall X0.v1_card_1 (k1_card_1 X0) \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.(X1 = k10_xtuple_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in k9_xtuple_0 X0) \wedge (X2 = k1_funct_1 X0 X3)))) \quad (8)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow ((X1 = k3_finseq_1 X0) \Leftrightarrow (k2_finseq_1 X1 = k9_xtuple_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2_tarski X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \quad (10)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (k1_finseq_1 X0 = \text{ReplSep} (\text{toset} (\lambda X1 : \iota.m2_subset_1 X1 k1_numbers k5_numbers)) (\lambda X1 : \iota.(r1_xxreal_0 np_1 X1) \wedge (r1_xxreal_0 X1 X0)) (\lambda X1 : \iota.X1)) \quad (11)$$

Assume the following.

$$\forall X0.((v3_ordinal1 X0) \wedge (v1_finset_1 X0)) \Rightarrow (v7_ordinal1 X0) \quad (12)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0))) \quad (13)$$

Assume the following.

$$\forall X0.(v1_card_1 X0) \Rightarrow (v3_ordinal1 X0) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 \\ & X0) \wedge ((v1_graph_2 X0) \wedge (v2_graph_2 X0)))))) \Rightarrow (\forall X1.((v1_relat_1 \\ X1) \wedge ((v1_funct_1 X1) \wedge ((v1_finseq_1 X1) \wedge ((v1_graph_2 X1) \wedge (v2_graph_2 \\ X1)))))) \Rightarrow (((k3_finseq_1 X0 = k3_finseq_1 X1) \wedge (k10_xtuple_0 X0 = \\ k10_xtuple_0 X1)) \Rightarrow ((X0 = X1) \vee (\forall X2.((v1_relat_1 X2) \wedge ((\\ v1_funct_1 X2) \wedge ((v1_finseq_1 X2) \wedge ((v1_graph_2 X2) \wedge (v2_graph_2 \\ X2)))))) \Rightarrow (\neg(k3_finseq_1 X2 = k3_finseq_1 X0) \wedge ((k10_xtuple_0 X2 = \\ k10_xtuple_0 X0) \wedge ((X2 \neq X0) \wedge (X2 \neq X1)))))))))) \end{aligned}$$