

t59_graph_5 (TMbYMJNSaqVN- mHrVn4CnQwYGYHi5bvgFd9o)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_graph_1 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $v7_graph_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $r3_graph_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ & \quad \neg v2_struct_0 X1) \wedge (l1_graph_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & \quad X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & \quad X1)) \Rightarrow (\forall X4.((\neg v1_xboole_0 X4) \wedge ((v1_finset_1 X4) \wedge (m1_subset_1 \\ & \quad X4 (k1_zfmisc_1 (k3_finseq_2 (u4_struct_0 X1)))))) \Rightarrow (\neg (X4 = k4_graph_5 \\ & \quad X1 X2 X3) \wedge (\forall X5.(m2_finseq_1 X5 (u4_struct_0 X1)) \Rightarrow (\neg (X5 \in \\ & \quad X4) \wedge (\forall X6.(m2_finseq_1 X6 (u4_struct_0 X1)) \Rightarrow ((X6 \in X4) \Rightarrow \\ & \quad (r1_xxreal_0 (k10_graph_5 X1 X5 X0) (k10_graph_5 X1 X6 X0)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v6_graph_1 X0) \wedge (l1_graph_1 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (v1_finset_1 (k4_graph_5 X0 X1 X2)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_graph_1 \\ & X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ & X0)))) \Rightarrow (m1_subset_1 (k4_graph_5 X0 X1 X2) (k1_zfmisc_1 (k3_finseq_2 \\ & (u4_struct_0 X0)))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_graph_1 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (k4_graph_5 X0 X1 X2 = ReplSep (toset (\lambda X3 : \\ & \iota. (v7_graph_1 X3 X0) \wedge ((v1_graph_4 X3 X0) \wedge (m2_graph_1 X3 X0)))) \\ & (\lambda X3 : \iota.r3_graph_5 X0 X3 X1 X2) (\lambda X3 : \iota.X3)))) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((\\ & \neg v2_struct_0 X1) \wedge ((v6_graph_1 X1) \wedge (l1_graph_1 X1))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ & (u1_struct_0 X1)) \Rightarrow (\neg (k4_graph_5 X1 X2 X3 \neq k1_xboole_0) \wedge (\forall X4. \\ & (m2_finseq_1 X4 (u4_struct_0 X1)) \Rightarrow (\neg (X4 \in k4_graph_5 X1 X2 X3) \wedge \\ & (\forall X5. (m2_finseq_1 X5 (u4_struct_0 X1)) \Rightarrow ((X5 \in k4_graph_5 \\ & X1 X2 X3) \Rightarrow (r1_xxreal_0 (k10_graph_5 X1 X4 X0) (k10_graph_5 X1 X5 \\ & X0)))))))))) \end{aligned}$$