

t39_group_9 (TM-
cgzbdE9C2AA17h8BXboC3s5r1GMYYVCNeG)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_9 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_group_9 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_group_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k17_group_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_group_9 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_group_1 X1) \wedge (\\ & (v3_group_1 X1) \wedge ((v3_group_9 X1 X0) \wedge (l1_group_9 X1 X0)))))) \Rightarrow (\\ & \forall X2. (m1_group_9 X2 X0 X1) \Rightarrow (\forall X3. (m1_group_9 X3 X0 \\ & X1) \Rightarrow ((\forall X4. (m1_group_9 X4 X0 X1) \Rightarrow ((X4 = k17_group_9 X0 X1 \\ & X2 X3) \Rightarrow (u1_struct_0 X4 = k3_xboole_0 (u1_struct_0 X2) (u1_struct_0 \\ & X3)))))) \wedge (\forall X4. ((v2_group_9 X4 X0) \wedge (m1_group_9 X4 X0 X1)) \Rightarrow \\ & ((u1_struct_0 X4 = k3_xboole_0 (u1_struct_0 X2) (u1_struct_0 X3)) \Rightarrow \\ & (X4 = k17_group_9 X0 X1 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_group_1 X1) \wedge (\\ & (v3_group_1 X1) \wedge ((v3_group_9 X1 X0) \wedge (l1_group_9 X1 X0)))))) \Rightarrow (\\ & \forall X2. ((\neg v2_struct_0 X2) \wedge ((v2_group_1 X2) \wedge ((v3_group_1 \\ & X2) \wedge ((v3_group_9 X2 X0) \wedge (l1_group_9 X2 X0)))))) \Rightarrow (\forall X3. (\\ & (\neg v2_struct_0 X3) \wedge ((v2_group_1 X3) \wedge ((v3_group_1 X3) \wedge ((v3_group_9 \\ & X3 X0) \wedge (l1_group_9 X3 X0)))))) \Rightarrow (((m1_group_9 X1 X0 X2) \wedge (m1_group_9 \\ & X2 X0 X3)) \Rightarrow (m1_group_9 X1 X0 X3))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_group_1 X1) \wedge (\\ & (v3_group_1 X1) \wedge ((v3_group_9 X1 X0) \wedge (l1_group_9 X1 X0)))))) \Rightarrow (\\ & \forall X2. (m1_group_9 X2 X0 X1) \Rightarrow ((\neg v2_struct_0 X2) \wedge ((v2_group_1 \\ & X2) \wedge ((v3_group_1 X2) \wedge ((v3_group_9 X2 X0) \wedge (l1_group_9 X2 X0)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X1)\wedge((v2_group_1 X1)\wedge((v3_group_1 X1)\wedge((v3_group_9 X1 X0)\wedge(\\ & l1_group_9 X1 X0))))))\wedge((m1_group_9 X2 X0 X1)\wedge(m1_group_9 X3 X0 \\ & X1)))\Rightarrow((v2_group_9 (k17_group_9 X0 X1 X2 X3) X0)\wedge(m1_group_9 (\\ & k17_group_9 X0 X1 X2 X3) X0 X1)) \end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2_struct_0 X1)\wedge((v2_group_1 X1)\wedge(\\ & (v3_group_1 X1)\wedge((v3_group_9 X1 X0)\wedge(l1_group_9 X1 X0))))))\Rightarrow(\\ & \forall X2.(m1_group_9 X2 X0 X1)\Rightarrow(\forall X3.(m1_group_9 X3 X0 \\ & X2)\Rightarrow(\forall X4.(m1_group_9 X4 X0 X2)\Rightarrow(\forall X5.(m1_group_9 \\ & X5 X0 X1)\Rightarrow(\forall X6.(m1_group_9 X6 X0 X1)\Rightarrow(((X3 = X5)\wedge(X4 = X6))\Rightarrow \\ & (k17_group_9 X0 X1 X5 X6 = k17_group_9 X0 X2 X3 X4)))))) \end{aligned}$$