

t21_unialg_2 (TMa- SoA8bvbPuTRpUXUH8bWEPDy5jwDs1SKb)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_unialg_1 : \iota \Rightarrow o$ be given. Let $v3_unialg_1 : \iota \Rightarrow o$ be given. Let $v4_unialg_1 : \iota \Rightarrow o$ be given. Let $l1_unialg_1 : \iota \Rightarrow o$ be given. Let $m1_unialg_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_unialg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_unialg_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_unialg_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 \\ & X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \wedge \\ & ((m1_unialg_2 X1 X0) \wedge (m1_unialg_2 X2 X0))) \Rightarrow ((v1_unialg_1 (k8_unialg_2 \\ & X0 X1 X2)) \wedge (m1_unialg_2 (k8_unialg_2 X0 X1 X2) X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1. (m1_unialg_2 \\ & X1 X0) \Rightarrow (\forall X2. (m1_unialg_2 X2 X0) \Rightarrow (\forall X3. ((v1_unialg_1 \\ & X3) \wedge (m1_unialg_2 X3 X0)) \Rightarrow ((X3 = k8_unialg_2 X0 X1 X2) \Leftrightarrow (\forall X4. \\ & ((\neg v1_xboole_0 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \Rightarrow ((X4 = k2_xboole_0 (u1_struct_0 X1) (u1_struct_0 X2)) \Rightarrow \\ & (X3 = k7_unialg_2 X0 X4))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1. (m1_unialg_2 \\ & X1 X0) \Rightarrow (\forall X2. (m1_unialg_2 X2 X0) \Rightarrow (k8_unialg_2 X0 X1 X2 = k8_unialg_2 \\ & X0 X2 X1))) \end{aligned}$$