

t15_rlsb_2 (TMcoAxbzdLZuRCYKkVVrjaTfMh- HEiCh3W3p)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $m1_rlsub_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_rlsub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_rlvect_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. k3_xboole_0 (k3_xboole_0 X0 X1) X2 = k3_xboole_0 X0 (k3_xboole_0 X1 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge \\ & (v5_rlvect_1 X0) \wedge (v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 X0) \wedge (l1_rlvect_1 X0)))) \wedge ((m1_rlsub_1 X1 X0) \wedge (m1_rlsub_1 \\ & X2 X0)) \Rightarrow ((v1_rlvect_1 (k2_rlsub_2 X0 X1 X2)) \wedge (m1_rlsub_1 (k2_rlsub_2 X0 X1 X2) X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 X0) \wedge (l1_rlvect_1 X0)))))) \Rightarrow (\forall X1. (m1_rlsub_1 X1 X0) \Rightarrow (\forall X2. (m1_rlsub_1 \\ & X2 X0) \Rightarrow (\forall X3. ((v1_rlvect_1 X3) \wedge (m1_rlsub_1 X3 X0)) \Rightarrow ((X3 = k2_rlsub_2 X0 X1 X2) \Leftrightarrow (u1_struct_0 X3 = k3_xboole_0 (u1_struct_0 X1) (u1_struct_0 X2)))))) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))) \Rightarrow (\forall X1.(m1_rlsub_1 X1 X0) \Rightarrow (\forall X2.(m1_rlsub_1 \\ & X2 X0) \Rightarrow (\forall X3.(m1_rlsub_1 X3 X0) \Rightarrow (k2_rlsub_2 X0 X1 (k2_rlsub_2 \\ & X0 X2 X3) = k2_rlsub_2 X0 (k2_rlsub_2 X0 X1 X2) X3)))) \end{aligned}$$