

t57_rewrite3

(TMGTweo8YMicqVVBDjfv3ZMCn4q9gVDafeT)

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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 $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_rewrite3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_flang_1 : \iota \Rightarrow \iota$ be given. Let $k1_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_catalan2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1_relat_1 X2) \Rightarrow ((m1_rewrite1 (k10_finseq_1 X0 X1) X2) \Rightarrow (k4_tarski X0 X1 \in X2)) \quad (1)$$

Assume the following.

$$\forall X0. (v1_relat_1 X0) \Rightarrow (\forall X1. \forall X2. (k4_tarski X1 X2 \in X0) \Rightarrow (m1_rewrite1 (k10_finseq_1 X1 X2) X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (\neg v1_xboole_0 X3) \Rightarrow \\ & (\forall X4. (m1_subset_1 X4 (k1_zfmisc_1 (k8_afinsq_1 X3))) \Rightarrow \\ & (\forall X5. ((\neg v2_struct_0 X5) \wedge (l1_rewrite3 X5 X4)) \Rightarrow ((r1_rewrite3 \\ & X4 X5 X0 X1 X2) \Leftrightarrow (k4_tarski (k4_tarski X0 X1) (k4_tarski X2 (k2_flang_1 \\ & X3)) \in k1_rewrite3 X3 X4 X5)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k8_afinsq_1 X1))) \Rightarrow (\forall X3. ((\neg v2_struct_0 \\ & X3) \wedge (l1_rewrite3 X3 X2)) \Rightarrow (\neg (X0 \in k1_rewrite3 X1 X2 X3) \wedge (\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 X3)) \Rightarrow (\forall X5. (m1_subset_1 X5 \\ & (u1_struct_0 X3)) \Rightarrow (\forall X6. (m1_subset_1 X6 (k8_afinsq_1 X1)) \Rightarrow \\ & (\forall X7. (m1_subset_1 X7 (k8_afinsq_1 X1)) \Rightarrow (X0 \neq k4_tarski \\ & (k4_tarski X4 X6) (k4_tarski X5 X7)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.k3_catalan2\ X0 = k8_afinsq_1\ X0 \quad (5)$$

Assume the following.

$$\forall X0.(v1_relat_1\ X0) \Leftrightarrow (\forall X1.\neg(X1 \in X0) \wedge (\forall X2.\forall X3.X1 \neq k4_tarski\ X2\ X3)) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(\neg v1_xboole_0\ X3) \Rightarrow \\ & (\forall X4.(m1_subset_1\ X4\ (k1_zfmisc_1\ (k8_afinsq_1\ X3))) \Rightarrow \\ & (\forall X5.((\neg v2_struct_0\ X5) \wedge (l1_rewrite3\ X5\ X4)) \Rightarrow ((r1_rewrite3 \\ & X4\ X5\ X0\ X1\ X2) \Leftrightarrow (m1_rewrite1\ (k10_finseq_1\ (k4_tarski\ X0\ X1)\ (k4_tarski \\ & X2\ (k2_flang_1\ X3)))\ (k1_rewrite3\ X3\ X4\ X5)))))) \end{aligned}$$