

t44_rewrite3 (TMN- WaeAKZHXMkf16cV84bgqYi3cW3w4DMaz)

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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 $v2_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r2_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\forall X3. \\
 & \quad (m1_subset_1 X3 (k1_zfmisc_1 (k8_afinsq_1 X2))) \Rightarrow (\forall X4. \\
 & ((\neg v2_struct_0 X4) \wedge (l1_rewrite3 X4 X3)) \Rightarrow (\neg (k4_tarski X0 X1 \in k1_rewrite3 \\
 & \quad X2 X3 X4) \wedge (\forall X5. (m1_subset_1 X5 (u1_struct_0 X4)) \Rightarrow (\forall X6. \\
 & \quad (m1_subset_1 X6 (k8_afinsq_1 X2)) \Rightarrow (\forall X7. (m1_subset_1 X7 \\
 & \quad (u1_struct_0 X4)) \Rightarrow (\forall X8. (m1_subset_1 X8 (k8_afinsq_1 X2)) \Rightarrow \\
 & \quad (\neg (X0 = k4_tarski X5 X6) \wedge (X1 = k4_tarski X7 X8))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
 & \forall X6. (\neg v1_xboole_0 X6) \Rightarrow (\forall X7. (m1_subset_1 X7 (k1_zfmisc_1 \\
 & \quad (k8_afinsq_1 X6))) \Rightarrow (\forall X8. ((v2_rewrite3 X8 X6 X7) \wedge (l1_rewrite3 \\
 & \quad X8 X7)) \Rightarrow (((r2_rewrite3 X6 X7 X8 X0 X1 X2 X3) \wedge (r2_rewrite3 X6 X7 X8 \\
 & \quad X0 X1 X4 X5)) \Rightarrow ((X2 = X4) \wedge (X3 = X5))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((m1_subset_1 \\
 & \quad X1 (k1_zfmisc_1 (k8_afinsq_1 X0))) \wedge ((\neg v2_struct_0 X2) \wedge (l1_rewrite3 \\
 & \quad X2 X1)))) \Rightarrow (m1_subset_1 (k1_rewrite3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\
 & \quad (k2_zfmisc_1 (u1_struct_0 X2) (k8_afinsq_1 X0)) (k2_zfmisc_1 \\
 & \quad (u1_struct_0 X2) (k8_afinsq_1 X0))))))
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\
& \quad (k8_afinsq_1 X0))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (l1_rewrite3 \\
& \quad X2 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad (k2_zfmisc_1 (u1_struct_0 X2) (k8_afinsq_1 X0)) (k2_zfmisc_1 \\
& \quad (u1_struct_0 X2) (k8_afinsq_1 X0)))))) \Rightarrow ((X3 = k1_rewrite3 X0 X1 \\
& \quad X2) \Leftrightarrow (\forall X4.\forall X5.\forall X6.\forall X7.(k4_tarski \\
& \quad (k4_tarski X4 X5) (k4_tarski X6 X7) \in X3) \Leftrightarrow (r2_rewrite3 X0 X1 X2 X4 \\
& \quad X5 X6 X7))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(\neg v1_xboole_0 X3) \Rightarrow \\
& \quad (\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (k8_afinsq_1 X3))) \Rightarrow \\
& \quad (\forall X5.((\neg v2_struct_0 X5) \wedge (l1_rewrite3 X5 X4)) \Rightarrow (((v2_rewrite3 \\
& \quad X5 X3 X4) \wedge ((k4_tarski X0 X1 \in k1_rewrite3 X3 X4 X5) \wedge (k4_tarski X0 \\
& \quad X2 \in k1_rewrite3 X3 X4 X5))) \Rightarrow (X1 = X2))))))
\end{aligned}$$