

## t34\_rewrite3

(TMRz4ik5iMtGFg86e6SCWM3LN5GnYcVc6CB)

October 27, 2020

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  $u1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\begin{aligned}
 & \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. (m1\_subset\_1 \\
 & \quad X2 (k1\_zfmisc\_1 (k8\_afinsq\_1 X1))) \Rightarrow (\forall X3. ((\neg v2\_struct\_0 \\
 & X3) \wedge (l1\_rewrite3 X3 X2)) \Rightarrow (\neg (X0 \in k1\_rewrite3 X1 X2 X3) \wedge (\forall X4. \\
 & \quad (m1\_subset\_1 X4 (u1\_struct\_0 X3)) \Rightarrow (\forall X5. (m1\_subset\_1 X5 \\
 & \quad (u1\_struct\_0 X3)) \Rightarrow (\forall X6. (m1\_subset\_1 X6 (k8\_afinsq\_1 X1)) \Rightarrow \\
 & \quad (\forall X7. (m1\_subset\_1 X7 (k8\_afinsq\_1 X1)) \Rightarrow (X0 \neq k4\_tarski \\
 & \quad (k4\_tarski X4 X6) (k4\_tarski X5 X7))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (\neg v1\_xboole\_0 \\
 & X4) \Rightarrow (\forall X5. (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k8\_afinsq\_1 X4))) \Rightarrow \\
 & \quad (\forall X6. (m1\_subset\_1 X6 (k1\_zfmisc\_1 (k8\_afinsq\_1 X4))) \Rightarrow \\
 & \quad (\forall X7. (l1\_rewrite3 X7 X5) \Rightarrow (\forall X8. (l1\_rewrite3 X8 X6) \Rightarrow \\
 & \quad (((u1\_rewrite3 X5 X7 = u1\_rewrite3 X6 X8) \wedge (r2\_rewrite3 X4 X5 X7 X0 \\
 & \quad X1 X2 X3)) \Rightarrow (r2\_rewrite3 X4 X6 X8 X0 X1 X2 X3))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (\forall X2. (X2 \in X0) \Leftrightarrow (X2 \in X1)) \Rightarrow (X0 = X1) \tag{3}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge ((m1\_subset\_1 \\
 & X1 (k1\_zfmisc\_1 (k8\_afinsq\_1 X0))) \wedge ((\neg v2\_struct\_0 X2) \wedge (l1\_rewrite3 \\
 & X2 X1)))) \Rightarrow (m1\_subset\_1 (k1\_rewrite3 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & \quad (k2\_zfmisc\_1 (u1\_struct\_0 X2) (k8\_afinsq\_1 X0)) (k2\_zfmisc\_1 \\
 & \quad (u1\_struct\_0 X2) (k8\_afinsq\_1 X0))))))
 \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& \quad (k8\_afinsq\_1 X0))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (l1\_rewrite3 \\
& \quad X2 X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X2) (k8\_afinsq\_1 X0)) (k2\_zfmisc\_1 \\
& \quad (u1\_struct\_0 X2) (k8\_afinsq\_1 X0)))))) \Rightarrow ((X3 = k1\_rewrite3 X0 X1 \\
& \quad X2) \Leftrightarrow (\forall X4.\forall X5.\forall X6.\forall X7.(k4\_tarski \\
& \quad (k4\_tarski X4 X5) (k4\_tarski X6 X7) \in X3) \Leftrightarrow (r2\_rewrite3 X0 X1 X2 X4 \\
& \quad X5 X6 X7))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& \quad (k8\_afinsq\_1 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& \quad (k8\_afinsq\_1 X0))) \Rightarrow (\forall X3.((\neg v2\_struct\_0 X3) \wedge (l1\_rewrite3 \\
& \quad X3 X1)) \Rightarrow (\forall X4.((\neg v2\_struct\_0 X4) \wedge (l1\_rewrite3 X4 X2)) \Rightarrow \\
& \quad ((u1\_rewrite3 X1 X3 = u1\_rewrite3 X2 X4) \Rightarrow (k1\_rewrite3 X0 X1 X3 = k1\_rewrite3 \\
& \quad X0 X2 X4))))))
\end{aligned}$$