

## t41\_rewrite3

(TMaZY9TJpAuu5Dt4TsEmBAuhwoUQnLu8Uom)

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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  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $u1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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.

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

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**

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