

# t43\_rewrite3 (TMG- ptK8AAwgM5QRtxrVu5fM8nCAP9VeSaLi)

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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  $k2\_flang\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_afinsq\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_flang\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. (\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3. \\
 & (m1\_subset\_1 X3 (k8\_afinsq\_1 X2)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\
 & (k8\_afinsq\_1 X2)) \Rightarrow (\forall X5. (m1\_subset\_1 X5 (k1\_zfmisc\_1 ( \\
 & k8\_afinsq\_1 X2)))) \Rightarrow (\forall X6. ((\neg v2\_struct\_0 X6) \wedge (l1\_rewrite3 \\
 & X6 X5)) \Rightarrow (\neg (\neg k2\_flang\_1 X2 \in k10\_xtuple\_0 (k9\_xtuple\_0 (u1\_rewrite3 \\
 & X5 X6)))) \wedge ((k4\_tarski (k4\_tarski X0 X3) (k4\_tarski X1 X4) \in k1\_rewrite3 \\
 & X2 X5 X6) \wedge (r1\_xxreal\_0 (k1\_afinsq\_1 X3) (k1\_afinsq\_1 X4))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. (\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3. \\
 & (m1\_subset\_1 X3 (k8\_afinsq\_1 X2)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\
 & (k8\_afinsq\_1 X2)) \Rightarrow (\forall X5. (m1\_subset\_1 X5 (k1\_zfmisc\_1 ( \\
 & k8\_afinsq\_1 X2)))) \Rightarrow (\forall X6. ((\neg v2\_struct\_0 X6) \wedge (l1\_rewrite3 \\
 & X6 X5)) \Rightarrow ((k4\_tarski (k4\_tarski X0 X3) (k4\_tarski X1 X4) \in k1\_rewrite3 \\
 & X2 X5 X6) \Rightarrow (r1\_xxreal\_0 (k1\_afinsq\_1 X4) (k1\_afinsq\_1 X3))))))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(\neg v1\_xboole\_0 \\
& X4)\Rightarrow(\forall X5.(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k8\_afinsq\_1 X4)))\Rightarrow \\
& (\forall X6.((\neg v2\_struct\_0 X6)\wedge(l1\_rewrite3 X6 X5))\Rightarrow(\neg(k4\_tarski \\
& (k4\_tarski X0 X1) (k4\_tarski X2 X3) \in k1\_rewrite3 X4 X5 X6)\wedge(\forall X7. \\
& (m1\_subset\_1 X7 (k8\_afinsq\_1 X4))\Rightarrow(\forall X8.(m1\_subset\_1 X8 \\
& (k8\_afinsq\_1 X4))\Rightarrow(\neg(X7 = X3)\wedge((r1\_rewrite3 X5 X6 X0 X8 X2)\wedge(X1 = \\
& k1\_flang\_1 X4 X8 X7))))))))))
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(\neg v1\_xboole\_0 X3)\Rightarrow \\
& (\forall X4.(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k8\_afinsq\_1 X3)))\Rightarrow \\
& (\forall X5.((\neg v2\_struct\_0 X5)\wedge(l1\_rewrite3 X5 X4))\Rightarrow(\neg(\neg k2\_flang\_1 \\
& X3 \in k10\_xtuple\_0 (k9\_xtuple\_0 (u1\_rewrite3 X4 X5)))\wedge(k4\_tarski \\
& (k4\_tarski X0 X1) (k4\_tarski X2 X1) \in k1\_rewrite3 X3 X4 X5))))))
\end{aligned}$$