

# t72\_rewrite3 (TMLecm- mxf22atV8unVPQRcVmkEL56uJXyVm)

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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  $r1\_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_flang\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k3\_catalan2 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

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

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. \forall X2. (k4\_tarski X1 X2 \in X0) \Rightarrow (r1\_rewrite1 X0 X1 X2)) \tag{2}$$

Assume the following.

$$\forall X0. k3\_catalan2 X0 = k8\_afinsq\_1 X0 \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \tag{5}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (\neg v1\_xboole\_0 X3) \Rightarrow \\ & (\forall X4. (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k8\_afinsq\_1 X3))) \Rightarrow \\ & (\forall X5. ((\neg v2\_struct\_0 X5) \wedge (l1\_rewrite3 X5 X4)) \Rightarrow ((r1\_rewrite3 \\ X4 X5 X0 X1 X2) \Rightarrow (r1\_rewrite1 (k1\_rewrite3 X3 X4 X5) (k4\_tarski X0 \\ X1) (k4\_tarski X2 (k2\_flang\_1 X3)))))) \end{aligned}$$