

## t44\_rewrite2

(TMEm7s8SeHNsGwhd6m5JPTEEx8EpLDrgo4Gi)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_afinsq\_1 : \iota \Rightarrow \iota$  be given. Let  $r3\_rewrite2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_rewrite2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_flang\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_rewrite2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0))) \Rightarrow (\forall X2. (m1\_subset\_1 \\
 & X2 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k8\_afinsq\_1 \\
 & X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X5. \\
 & (m1\_subset\_1 X5 (k8\_afinsq\_1 X0)) \Rightarrow ((r3\_rewrite2 X0 X1 X2 X3) \Rightarrow ( \\
 & r3\_rewrite2 X0 X1 (k1\_flang\_1 X0 (k1\_flang\_1 X0 X4 X2) X5) (k1\_flang\_1 \\
 & X0 (k1\_flang\_1 X0 X4 X3) X5)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (k4\_tarski X0 X1 = k4\_tarski X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X2 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow (k4\_lang1 X0 X1 X2 = k1\_tarski X2) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge ((m1\_subset\_1 X2 X0) \wedge (m1\_subset\_1 X3 X1)))) \Rightarrow (k1\_domain\_1 X0 X1 X2 X3 = k4\_tarski X2 X3) \tag{4}$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k8\_afinsq\_1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 \\ & X1) \wedge (m1\_subset\_1 X2 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow (m1\_subset\_1 (k4\_lang1 \\ & X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ & ((\neg v1\_xboole\_0 X1) \wedge ((m1\_subset\_1 X2 X0) \wedge (m1\_subset\_1 X3 X1)))) \Rightarrow \\ & (m1\_subset\_1 (k1\_domain\_1 X0 X1 X2 X3) (k2\_zfmisc\_1 X0 X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 X1) (k1\_tarski X0) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k8\_afinsq\_1 \\ & X0)) \Rightarrow ((r2\_rewrite2 X0 X1 X2 X3) \Leftrightarrow (\exists X4. (m1\_subset\_1 X4 (k8\_afinsq\_1 \\ & X0)) \wedge (\exists X5. (m1\_subset\_1 X5 (k8\_afinsq\_1 X0)) \wedge (\exists X6. \\ & (m1\_subset\_1 X6 (k8\_afinsq\_1 X0)) \wedge (\exists X7. (m1\_subset\_1 X7 \\ & (k8\_afinsq\_1 X0)) \wedge ((X2 = k1\_flang\_1 X0 (k1\_flang\_1 X0 X4 X6) X5) \wedge \\ & ((X3 = k1\_flang\_1 X0 (k1\_flang\_1 X0 X4 X7) X5) \wedge (r1\_rewrite2 X0 X1 \\ & X6 X7)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k8\_afinsq\_1 \\ & X0)) \Rightarrow ((r1\_rewrite2 X0 X1 X2 X3) \Leftrightarrow (k1\_domain\_1 (k8\_afinsq\_1 X0) \\ & (k8\_afinsq\_1 X0) X2 X3 \in X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1\_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k8\_afinsq\_1 \\ & X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X5. \\ & (m1\_subset\_1 X5 (k8\_afinsq\_1 X0)) \Rightarrow (((r3\_rewrite2 X0 X1 X2 X3) \wedge \\ & (r2\_rewrite2 X0 (k4\_lang1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0) (k1\_domain\_1 \\ & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0) X2 X3)) X4 X5)) \Rightarrow (r3\_rewrite2 \\ & X0 X1 X4 X5)))))) \end{aligned}$$