

## t39\_rewrite2

(TMYq83cd11N32eZVRUV4YjRyRCRXPV8GrWv)

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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  $v3\_relat\_2 : \iota \Rightarrow o$  be given. Let  $r3\_rewrite2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $m1\_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_5 : \iota \Rightarrow \iota$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_rewrite2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(m1\_rewrite1 X1 X0) \Rightarrow (m1\_rewrite1 (k3\_finseq\_5 X1) (k2\_relat\_1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow ((k1\_funct\_1 X0 np\_1 = k1\_funct\_1 (k3\_finseq\_5 X0) (k3\_finseq\_1 X0)) \wedge (k1\_funct\_1 X0 (k3\_finseq\_1 X0) = k1\_funct\_1 (k3\_finseq\_5 X0) np\_1)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (((v3\_relat\_2 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (r2\_relset\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0) (k7\_rewrite2 X0 X1) (k3\_relset\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0) (k7\_rewrite2 X0 X1)))))) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(k3\_relset\_1 X0 X1 X2 = k2\_relat\_1 X2) \quad (5)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow(k3\_finseq\_5 (k3\_finseq\_5 X0) = X0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1 (k2\_zfmisc\_1 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.(m1\_rewrite1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0))))\Rightarrow(m1\_subset\_1 (k7\_rewrite2 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(m1\_subset\_1 (k3\_relset\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0))))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k8\_afinsq\_1 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (k8\_afinsq\_1 X0))\Rightarrow((r3\_rewrite2 X0 X1 X2 X3)\Leftrightarrow(r1\_rewrite1 (k7\_rewrite2 X0 X1) X2 X3)))) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.\forall X2.(r1\_rewrite1 X0 X1 X2)\Leftrightarrow(\exists X3.(m1\_rewrite1 X3 X0)\wedge((k1\_funct\_1 X3 np\_1 = X1)\wedge(k1\_funct\_1 X3 (k3\_finseq\_1 X3) = X2)))) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_relat\_1 X1)) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k8\_afinsq\_1 \\ & X0)) \Rightarrow (((v3\_relat\_2 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))))) \wedge (r3\_rewrite2 X0 X1 X2 X3)) \Rightarrow \\ & (r3\_rewrite2 X0 X1 X3 X2)))) \end{aligned}$$