

# t10\_rewrite2

(TMQx3YcZXuz8pcyWUuRJreqx1g1EfqTgeH7)

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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  $r1\_rewrite2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_rewrite2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k3\_catalan2 : \iota \Rightarrow \iota$  be given. Let  $k2\_flang\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_afinsq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_flang\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v5\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_funct\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. k3\_catalan2 X0 = k8\_afinsq\_1 X0 \quad (2)$$

Assume the following.

$$\forall X0. k2\_flang\_1 X0 = k4\_afinsq\_1 X0 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1\_subset\_1 X1 (k3\_catalan2 X0)) \wedge (m1\_subset\_1 X2 (k3\_catalan2 X0))) \Rightarrow (k1\_flang\_1 X0 X1 X2 = k1\_ordinal4 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0)))) \Rightarrow (k1\_ordinal4 k1\_xboole\_0 X0 = X0) \quad (5)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0)))) \Rightarrow (k1\_ordinal4 X0 k1\_xboole\_0 = X0) \quad (6)$$

Assume the following.

$$\exists X0.v1\_xboole\_0 X0 \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k4\_afinsq\_1 X0)) \wedge ((v5\_relat\_1 (k4\_afinsq\_1 X0) X0) \wedge ((v5\_ordinal1 (k4\_afinsq\_1 X0)) \wedge ((v1\_funct\_1 (k4\_afinsq\_1 X0)) \wedge ((v1\_xboole\_0 (k4\_afinsq\_1 X0)) \wedge (v1\_finset\_1 (k4\_afinsq\_1 X0))))))) \quad (8)$$

Assume the following.

$$\forall X0.v4\_funct\_1 (k8\_afinsq\_1 X0) \quad (9)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (10)$$

Assume the following.

$$\forall X0.m1\_subset\_1 (k2\_flang\_1 X0) (k3\_catalan2 X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k3\_catalan2 X0)) \wedge (m1\_subset\_1 X2 (k3\_catalan2 X0))) \Rightarrow (m1\_subset\_1 (k1\_flang\_1 X0 X1 X2) (k3\_catalan2 X0)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k8\_afinsq\_1 X0)) \Rightarrow ((r2\_rewrite2 X0 X1 X2 X3) \Leftrightarrow (\exists X4.(m1\_subset\_1 X4 (k8\_afinsq\_1 X0)) \wedge (\exists X5.(m1\_subset\_1 X5 (k8\_afinsq\_1 X0)) \wedge (\exists X6.(m1\_subset\_1 X6 (k8\_afinsq\_1 X0)) \wedge (\exists X7.(m1\_subset\_1 X7 (k8\_afinsq\_1 X0)) \wedge ((X2 = k1\_flang\_1 X0 (k1\_flang\_1 X0 X4 X6) X5) \wedge ((X3 = k1\_flang\_1 X0 (k1\_flang\_1 X0 X4 X7) X5) \wedge (r1\_rewrite2 X0 X1 X6 X7)))))))))) \quad (13)$$

Assume the following.

$$\forall X0.(v4\_funct\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k8\_afinsq\_1 X0)) \Rightarrow ((v5\_ordinal1 X1) \wedge (v1\_finset\_1 X1)) \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k8\_afinsq\_1 X0) (k8\_afinsq\_1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (k8\_afinsq\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k8\_afinsq\_1 \\ & X0)) \Rightarrow ((r1\_rewrite2 X0 X1 X2 X3) \Rightarrow (r2\_rewrite2 X0 X1 X2 X3)))) \end{aligned}$$