

## t60\_relset\_2

(TMTDbsw45MJo4uSxPK2JyrdNtk84Xa1A3dX)

October 27, 2020

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  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_relset\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))) \Rightarrow (r2\_relset\_1 X1 X0 (k3\_relset\_1 X0 X1 (k3\_subset\_1 \\ & (k2\_zfmisc\_1 X0 X1) X2)) (k3\_subset\_1 (k2\_zfmisc\_1 X1 X0) (k3\_relset\_1 \\ & X0 X1 X2))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 \\ & X1))) \Rightarrow (k3\_subset\_1 X1 (k6\_relset\_2 X0 X1 X2 X3) = k7\_relset\_1 X0 \\ & X1 (k3\_subset\_1 (k2\_zfmisc\_1 X0 X1) X3) X2)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 X1)) \Rightarrow (\forall X4. \\ & (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((r1\_xboole\_0 \\ & X2 (k7\_relset\_1 X1 X0 (k3\_relset\_1 X0 X1 X4) X3)) \Leftrightarrow (r1\_xboole\_0 X3 \\ & (k7\_relset\_1 X0 X1 X4 X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow ((r1\_xboole\_0 X1 (k3\_subset\_1 \\ & X0 X2)) \Leftrightarrow (r1\_tarski X1 X2))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow((r2\_relset\_1 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(k3\_relset\_1 X0 X1 X2 = k2\_relat\_1 X2) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(k2\_relat\_1 (k2\_relat\_1 X0) = X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1 (k2\_zfmisc\_1 X0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow(m1\_subset\_1 (k6\_relset\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 X1)) \quad (9)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(m1\_subset\_1 (k3\_relset\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_relat\_1 X1)) \quad (12)$$

**Theorem 1**

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 X1))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((r1\_tarski X2 (k6\_relset\_2 X1 X0 X3 (k3\_relset\_1 X0 X1 X4))\Leftrightarrow(r1\_tarski X3 (k6\_relset\_2 X0 X1 X2 X4))))))$$