

t69\_rlaffin1 (TMd-  
JJA1cmApTjp5QUYfzQAQeShJyFNqWLRW)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_rlaffin1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_rusub\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X2 X1)) \Rightarrow (r1\_tarski (k2\_xboole\_0 X0 X2) X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 (k2\_xboole\_0 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_rlvect\_1 X0)) \Rightarrow (\forall X1. \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((r1\_tarski \\ X1 X2) \Rightarrow (r1\_tarski (k4\_rlaffin1 X0 X1) (k4\_rlaffin1 X0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (r1\_tarski (k1\_setfam\_1 X1) X0) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))) \Rightarrow (k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_rlvect\_1 X0)) \Rightarrow (\forall X1. \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (r1\_tarski X1 \\ (k4\_rlaffin1 X0 X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_rlvect\_1 X0))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(v2\_rusub\_4 (k4\_rlaffin1 X0 X1) X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(m1\_subset\_1 (k4\_subset\_1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_rlvect\_1 X0))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k4\_rlaffin1 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_rlvect\_1 X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow(k4\_rlaffin1 X0 X1 = k1\_setfam\_1 (ReplSep (toset (\lambda X2 : \iota.(v2\_rusub\_4 X2 X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))) (\lambda X2 : \iota.r1\_tarski X1 X2) (\lambda X2 : \iota.X2)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1\_tarski X0 X1)\wedge(r1\_tarski X1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (12)$$

### Theorem 1

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_rlvect\_1 X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow((r1\_tarski X1 (k4\_rlaffin1 X0 X2))\Rightarrow(k4\_rlaffin1 X0 (k4\_subset\_1 (u1\_struct\_0 X0) X1 X2) = k4\_rlaffin1 X0 X2))))$$