

t11\_circled1 (TM-  
cUAnet1cBhQ8WXQAu8nQNDrddZ4NDco2S)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  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  $k2\_circled1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_circled1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v3\_rltopsp1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \Rightarrow (k6\_setfam\_1 X0 X1 = k1\_setfam\_1 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge \\ & ((v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v5\_rlvect\_1 \\ & X0) \wedge (v6\_rlvect\_1 X0) \wedge (v7\_rlvect\_1 X0) \wedge (v8\_rlvect\_1 X0) \wedge \\ & (l1\_rlvect\_1 X0)))))) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\neg v1\_xboole\_0 (k1\_circled1 X0 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (l1\_rlvect\_1 X0) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 \\ & (k1\_circled1 X0 X1) (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1 \\ &X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge \\ &((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1 \\ &X0))))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0 \\ &X0)))\Rightarrow(k2\_circled1\ X0\ X1 = k6\_setfam\_1\ (u1\_struct\_0\ X0)\ (k1\_circled1 \\ &X0\ X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_rlvect\_1\ X0))\Rightarrow(\forall X1. \\ &(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2. \\ &(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow \\ &((X2 = k1\_circled1\ X0\ X1)\Leftrightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1 \\ &(u1\_struct\_0\ X0)))\Rightarrow((X3 \in X2)\Leftrightarrow((v3\_rltopsp1\ X3\ X0)\wedge(r1\_tarski \\ &X1\ X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.((X0 \neq k1\_xboole\_0)\Rightarrow((X1 = k1\_setfam\_1\ X0)\Leftrightarrow \\ &(\forall X2.(X2 \in X1)\Leftrightarrow(\forall X3.(X3 \in X0)\Rightarrow(X2 \in X3))))\wedge((X0 = \\ &k1\_xboole\_0)\Rightarrow((X1 = k1\_setfam\_1\ X0)\Leftrightarrow(X1 = k1\_xboole\_0))) \end{aligned} \quad (9)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1 \\ &X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge \\ &((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1 \\ &X0))))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0 \\ &X0)))\Rightarrow(r1\_tarski\ X1\ (k2\_circled1\ X0\ X1))) \end{aligned}$$