

# t10\_unialg\_3 (TMKeErco- Drc5BKWFTBHXNhW8fgH7GVspn1r)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v3\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v4\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v2\_unialg\_2 : \iota \Rightarrow o$  be given. Let  $l1\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v1\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $m1\_unialg\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_unialg\_2 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_unialg\_3 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_unialg\_3 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_unialg\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_unialg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ X0) \wedge ((v4\_unialg\_1 X0) \wedge ((v2\_unialg\_2 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow & (1) \\ (\forall X1. (m1\_unialg\_2 X1 X0) \Rightarrow (k6\_unialg\_2 X0 = k6\_unialg\_2 & \\ X1)) & \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Leftrightarrow (r1\_tarski X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ X0) \wedge ((v4\_unialg\_1 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow (\forall X1. (X1 \in & (3) \\ k1\_unialg\_3 X0) \Leftrightarrow (\exists X2. ((v1\_unialg\_1 X2) \wedge (m1\_unialg\_2 \\ X2 X0)) \wedge (X1 = X2))) & \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v2\_unialg\_1 X0)\wedge \\ & ((v3\_unialg\_1 X0)\wedge((v4\_unialg\_1 X0)\wedge(l1\_unialg\_1 X0)))))\wedge \\ & (\neg v1\_xboole\_0 X1)\wedge(m1\_unialg\_3 X1 X0))\Rightarrow(\forall X2.(m2\_unialg\_3 \\ & X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.k9\_setfam\_1 X0 = k1\_zfmisc\_1 X0 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(k3\_funct\_2 X0 \\ & X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_unialg\_1 X0)\wedge((v3\_unialg\_1 \\ & X0)\wedge((v4\_unialg\_1 X0)\wedge(l1\_unialg\_1 X0)))))\Rightarrow(\forall X1.(m1\_unialg\_2 \\ & X1 X0)\Rightarrow((\neg v2\_struct\_0 X1)\wedge((v2\_unialg\_1 X1)\wedge((v3\_unialg\_1 X1)\wedge \\ & ((v4\_unialg\_1 X1)\wedge(l1\_unialg\_1 X1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_unialg\_1 X0)\wedge((v3\_unialg\_1 \\ & X0)\wedge((v4\_unialg\_1 X0)\wedge(l1\_unialg\_1 X0)))))\Rightarrow(m1\_subset\_1 (k6\_unialg\_2 \\ & X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_unialg\_1 X0)\wedge((v3\_unialg\_1 \\ & X0)\wedge((v4\_unialg\_1 X0)\wedge(l1\_unialg\_1 X0)))))\Rightarrow((v1\_funct\_1 (k3\_unialg\_3 \\ & X0)\wedge((v1\_funct\_2 (k3\_unialg\_3 X0) (k1\_unialg\_3 X0) (k9\_setfam\_1 \\ & (u1\_struct\_0 X0)))\wedge(m1\_subset\_1 (k3\_unialg\_3 X0) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k1\_unialg\_3 X0) (k9\_setfam\_1 (u1\_struct\_0 X0))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_unialg\_1 X0)\wedge((v3\_unialg\_1 \\ & X0)\wedge((v4\_unialg\_1 X0)\wedge(l1\_unialg\_1 X0)))))\Rightarrow((\neg v1\_xboole\_0 \\ & (k1\_unialg\_3 X0))\wedge(m1\_unialg\_3 (k1\_unialg\_3 X0) X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\
& X0) \wedge ((v4\_unialg\_1 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow (\forall X1.((v1\_funct\_1 \\
& X1) \wedge ((v1\_funct\_2 X1 (k1\_unialg\_3 X0) (k9\_setfam\_1 (u1\_struct\_0 \\
& X0))) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_unialg\_3 \\
& X0) (k9\_setfam\_1 (u1\_struct\_0 X0))))))) \Rightarrow ((X1 = k3\_unialg\_3 X0) \Leftrightarrow \\
& (\forall X2.(m2\_unialg\_3 X2 X0 (k1\_unialg\_3 X0)) \Rightarrow (\forall X3. \\
& (m1\_unialg\_2 X3 X0) \Rightarrow ((X2 = X3) \Rightarrow (k3\_funct\_2 (k1\_unialg\_3 X0) (k9\_setfam\_1 \\
& (u1\_struct\_0 X0)) X1 X2 = u1\_struct\_0 X3))))))
\end{aligned} \tag{12}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\
& X0) \wedge ((v4\_unialg\_1 X0) \wedge ((v2\_unialg\_2 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow \\
& (\forall X1.((v1\_unialg\_1 X1) \wedge (m1\_unialg\_2 X1 X0)) \Rightarrow (r1\_tarski \\
& (k6\_unialg\_2 X0) (k1\_funct\_1 (k3\_unialg\_3 X0) X1)))
\end{aligned}$$