

## l24\_aff\_4

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Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_diraf : \iota \Rightarrow o$  be given. Let  $l1\_analoaf : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_aff\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r5\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_aff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & ((r3\_aff\_1 X0 X1 X2) \Rightarrow ((v1\_aff\_1 X1 X0) \wedge (v1\_aff\_1 X2 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)) \Rightarrow (((v1\_aff\_1 X3 X0) \wedge (X1 \in X3)) \Rightarrow ((X2 \in X3) \Leftrightarrow (r2\_aff\_1 \\ & X0 X1 X2 X3))))))) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & ((r5\_aff\_1 X0 X1 X2) \Rightarrow (k1\_aff\_4 X0 X1 X3 = k1\_aff\_4 X0 X2 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v7\_struct\_0 X0)\wedge((v1\_diraf \\ X0)\wedge(l1\_analoaf X0)))\wedge((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0)))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow((r5\_aff\_1 \\ X0 X1 X2)\Rightarrow(r5\_aff\_1 X0 X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v7\_struct\_0 X0)\wedge((v1\_diraf \\ X0)\wedge(l1\_analoaf X0)))\wedge((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0)))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow((r5\_aff\_1 \\ X0 X1 X2)\Leftrightarrow(r3\_aff\_1 X0 X1 X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v7\_struct\_0 X0)\wedge((v1\_diraf X0)\wedge(l1\_analoaf X0)))\Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow \\ (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow \\ (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow((X3 \in k1\_aff\_4 \\ X0 X1 X2)\Leftrightarrow(\exists X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0))\wedge((r2\_aff\_1 \\ X0 X3 X4 X1)\wedge(X4 \in X2))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski X0 X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \quad (9)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v7\_struct\_0 X0)\wedge((v1\_diraf X0)\wedge(l1\_analoaf X0)))\Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow(\forall X3.(m1\_subset\_1 \\ X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow(\forall X4.(m1\_subset\_1 \\ X4 (k1\_zfmisc\_1 (u1\_struct\_0 X0))\Rightarrow(((X1 \in X2)\wedge((X1 \in k1\_aff\_4 \\ X0 X3 X4)\wedge(r5\_aff\_1 X0 X3 X2))\Rightarrow(r1\_tarski X2 (k1\_aff\_4 X0 X3 X4)))))))))) \end{aligned}$$