

## t52\_aff\_4

(TMGh8fNqFgFAzWk6b5r4yYwzrVzzdME3e32)

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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  $v2\_diraf : \iota \Rightarrow o$  be given. Let  $v11\_aff\_2 : \iota \Rightarrow o$  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  $r5\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_aff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5. \\
& (m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 (k1\_zfmisc\_1 ( \\
& u1\_struct\_0 X0))) \Rightarrow (\forall X8.(m1\_subset\_1 X8 (k1\_zfmisc\_1 ( \\
& u1\_struct\_0 X0))) \Rightarrow (\forall X9.(m1\_subset\_1 X9 (k1\_zfmisc\_1 ( \\
& u1\_struct\_0 X0)))) \Rightarrow (((r5\_aff\_1 X0 X7 X8) \wedge (r5\_aff\_1 X0 X7 X9) \wedge \\
& (X1 \in X7) \wedge ((X2 \in X7) \wedge ((X3 \in X8) \wedge ((X4 \in X8) \wedge ((X5 \in X9) \wedge ((X6 \in X9) \wedge (( \\
& v1\_aff\_1 X7 X0) \wedge ((v1\_aff\_1 X8 X0) \wedge ((v1\_aff\_1 X9 X0) \wedge ((r2\_analoaf \\
& X0 X1 X3 X2 X4) \wedge (r2\_analoaf X0 X1 X5 X2 X6)))))))))) \Rightarrow (((\neg v7\_struct\_0 \\
& X0) \wedge ((v1\_diraf X0) \wedge ((v2\_diraf X0) \wedge (l1\_analoaf X0))) \vee ((X7 = \\
& X8) \vee ((X7 = X9) \vee (r2\_analoaf X0 X3 X5 X4 X6))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& ((v11\_aff\_2 X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& \quad X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& \quad X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& \quad X0))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5. \\
& \quad (m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X0)) \Rightarrow \\
& \quad (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 X0)) \Rightarrow (\forall X9.(m1\_subset\_1 \\
& \quad X9 (u1\_struct\_0 X0)) \Rightarrow (((r5\_aff\_1 X0 X1 X2) \wedge ((r5\_aff\_1 X0 X1 X3) \wedge \\
& \quad ((X4 \in X1) \wedge ((X7 \in X1) \wedge ((X5 \in X2) \wedge ((X8 \in X2) \wedge ((X6 \in X3) \wedge ((X9 \in X3) \wedge \\
& \quad (v1\_aff\_1 X1 X0) \wedge ((v1\_aff\_1 X2 X0) \wedge ((v1\_aff\_1 X3 X0) \wedge ((r2\_analoaf \\
& \quad X0 X4 X5 X7 X8) \wedge (r2\_analoaf X0 X4 X6 X7 X9)))))))))) \Rightarrow ((X1 = X2) \vee \\
& \quad ((X1 = X3) \vee (r2\_analoaf X0 X5 X6 X8 X9))))))))))
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& ((\neg(\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (v2\_diraf X0) \wedge (l1\_analoaf \\
& \quad X0)))) \Rightarrow (v11\_aff\_2 X0)
\end{aligned}$$