

t6_twoscomp (TMHjampEzBx- uUg9mVCupCKunPQZ45vP2C5Q)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_margrel1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_twoscomp : \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_twoscomp : \iota$ be given. Let $k3_twoscomp : \iota$ be given. Let $k12_twoscomp : \iota$ be given. Let $k4_twoscomp : \iota$ be given. Let $k11_twoscomp : \iota$ be given. Let $k9_margrel1 : \iota \Rightarrow \iota$ be given. Let $k3_xboolean : \iota \Rightarrow \iota$ be given. Let $k1_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboolean : \iota \Rightarrow o$ 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 $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (k9_margrel1 X0 = k3_xboolean X0) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 X1 k6_margrel1)) \Rightarrow (k1_binarith X0 X1 = k5_xboolean X0 X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 X1 k6_margrel1)) \Rightarrow (k10_margrel1 X0 X1 = k4_xboolean X0 X1) \tag{3}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (k9_margrel1 (k9_margrel1 X0) = X0) \tag{4}$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (k3_xboolean (k3_xboolean X0) = X0) \tag{5}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (m1_subset_1 (k9_margrel1 X0) k6_margrel1) \tag{6}$$

Assume the following.

$$(v1_funct_1\ k4_twoscomp) \wedge ((v1_funct_2\ k4_twoscomp\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ k4_twoscomp\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))) \quad (7)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (v1_xboolean\ (k3_xboolean\ X0)) \quad (8)$$

Assume the following.

$$(v1_funct_1\ k3_twoscomp) \wedge ((v1_funct_2\ k3_twoscomp\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ k3_twoscomp\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))) \quad (9)$$

Assume the following.

$$(v1_funct_1\ k2_twoscomp) \wedge ((v1_funct_2\ k2_twoscomp\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ k2_twoscomp\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))) \quad (10)$$

Assume the following.

$$(v1_funct_1\ k13_twoscomp) \wedge ((v1_funct_2\ k13_twoscomp\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ k13_twoscomp\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))) \quad (11)$$

Assume the following.

$$(v1_funct_1\ k12_twoscomp) \wedge ((v1_funct_2\ k12_twoscomp\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ k12_twoscomp\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))) \quad (12)$$

Assume the following.

$$(v1_funct_1\ k11_twoscomp) \wedge ((v1_funct_2\ k11_twoscomp\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ k11_twoscomp\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k6_margrel1) \wedge (m1_subset_1\ X1\ k6_margrel1)) \Rightarrow (m1_subset_1\ (k10_margrel1\ X0\ X1)\ k6_margrel1) \quad (14)$$

Assume the following.

$$\forall X0.(v1_xboolean\ X0) \Rightarrow (\forall X1.(v1_xboolean\ X1) \Rightarrow (k5_xboolean\ X0\ X1 = k3_xboolean\ (k4_xboolean\ (k3_xboolean\ X0)\ (k3_xboolean\ X1)))) \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 \\
& k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))))) \Rightarrow ((X0 = k4_twoscomp) \Leftrightarrow \\
& (\forall X1.(m1_subset_1 X1 k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 k6_margrel1) \Rightarrow (k1_funct_1 X0 (k10_finseq_1 X1 X2) = k10_margrel1 \\
& (k9_margrel1 X1) (k9_margrel1 X2))))))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 \\
& k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))))) \Rightarrow ((X0 = k3_twoscomp) \Leftrightarrow \\
& (\forall X1.(m1_subset_1 X1 k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 k6_margrel1) \Rightarrow (k1_funct_1 X0 (k10_finseq_1 X1 X2) = k10_margrel1 \\
& (k9_margrel1 X1) X2))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 \\
& k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))))) \Rightarrow ((X0 = k2_twoscomp) \Leftrightarrow \\
& (\forall X1.(m1_subset_1 X1 k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 k6_margrel1) \Rightarrow (k1_funct_1 X0 (k10_finseq_1 X1 X2) = k10_margrel1 \\
& X1 X2))))))
\end{aligned} \tag{18}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 \\
& k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))))) \Rightarrow ((X0 = k13_twoscomp) \Leftrightarrow \\
& (\forall X1.(m1_subset_1 X1 k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 k6_margrel1) \Rightarrow (k1_funct_1 X0 (k10_finseq_1 X1 X2) = k9_margrel1 \\
& (k1_binarith (k9_margrel1 X1) (k9_margrel1 X2))))))
\end{aligned} \tag{19}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 \\
& k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))))) \Rightarrow ((X0 = k12_twoscomp) \Leftrightarrow \\
& (\forall X1.(m1_subset_1 X1 k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 k6_margrel1) \Rightarrow (k1_funct_1 X0 (k10_finseq_1 X1 X2) = k9_margrel1 \\
& (k1_binarith (k9_margrel1 X1) X2))))))
\end{aligned} \tag{20}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 \\ k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))))) \Rightarrow ((X0 = k11_twoscomp) \Leftrightarrow \\ (\forall X1.(m1_subset_1 X1 k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1 \\ X2 k6_margrel1) \Rightarrow (k1_funct_1 X0 (k10_finseq_1 X1 X2) = k9_margrel1 \\ (k1_binarith X1 X2)))))) \end{aligned} \quad (21)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 \\ X1 k6_margrel1)) \Rightarrow (k1_binarith X0 X1 = k1_binarith X1 X0) \quad (22)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 \\ X1 k6_margrel1)) \Rightarrow (k10_margrel1 X0 X1 = k10_margrel1 X1 X0) \quad (23)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k6_margrel1) \Rightarrow (v1_xboolean X0) \quad (24)$$

Theorem 1

$$\begin{aligned} \forall X0. (m1_subset_1 X0 k6_margrel1) \Rightarrow (\forall X1. (m1_subset_1 \\ X1 k6_margrel1) \Rightarrow ((k1_funct_1 k2_twoscomp (k10_finseq_1 X0 X1) = \\ k1_funct_1 k13_twoscomp (k10_finseq_1 X0 X1)) \wedge ((k1_funct_1 k3_twoscomp \\ (k10_finseq_1 X0 X1) = k1_funct_1 k12_twoscomp (k10_finseq_1 X1 \\ X0)) \wedge (k1_funct_1 k4_twoscomp (k10_finseq_1 X0 X1) = k1_funct_1 \\ k11_twoscomp (k10_finseq_1 X0 X1)))))) \end{aligned}$$