

t4_gfacirc1 (TM- cYXfRQWfA7UbcXc3mTbRPpyjSWxk6dTVf)

October 27, 2020

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 $k4_gfacirc1 : \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_margrel1 : \iota \Rightarrow \iota$ be given. Let $k15_twoscomp : \iota$ be given. Let $k8_twoscomp : \iota$ be given. Let $k4_twoscomp : \iota$ be given. Let $k2_twoscomp : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k3_twoscomp : \iota$ be given. Let $k13_twoscomp : \iota$ be given. Let $k12_twoscomp : \iota$ be given. Let $k11_twoscomp : \iota$ be given. Let $v1_xbool_0 : \iota \Rightarrow o$ be given. Let $k1_xbool_0 : \iota$ be given. Let $k14_twoscomp : \iota$ be given. Let $k16_twoscomp : \iota$ be given. Let $k1_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_twoscomp : \iota$ be given. Let $k10_twoscomp : \iota$ be given. Let $k10_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_0 : \iota$ 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 $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned}
 & (k1_funct_1 \ k2_twoscomp \ (k10_finseq_1 \ k6_numbers \ k6_numbers) = \\
 & \ k6_numbers) \wedge ((k1_funct_1 \ k2_twoscomp \ (k10_finseq_1 \ k6_numbers \\
 & \ np_1) = k6_numbers) \wedge ((k1_funct_1 \ k2_twoscomp \ (k10_finseq_1 \\
 & \ np_1 \ k6_numbers) = k6_numbers) \wedge ((k1_funct_1 \ k2_twoscomp \ (k10_finseq_1 \\
 & \ np_1 \ np_1) = np_1) \wedge ((k1_funct_1 \ k3_twoscomp \ (k10_finseq_1 \\
 & \ k6_numbers \ k6_numbers) = k6_numbers) \wedge ((k1_funct_1 \ k3_twoscomp \\
 & \ (k10_finseq_1 \ k6_numbers \ np_1) = np_1) \wedge ((k1_funct_1 \ k3_twoscomp \\
 & \ (k10_finseq_1 \ np_1 \ k6_numbers) = k6_numbers) \wedge ((k1_funct_1 \ k3_twoscomp \\
 & \ (k10_finseq_1 \ np_1 \ np_1) = k6_numbers) \wedge ((k1_funct_1 \ k4_twoscomp \\
 & \ (k10_finseq_1 \ k6_numbers \ k6_numbers) = np_1) \wedge ((k1_funct_1 \ k4_twoscomp \\
 & \ (k10_finseq_1 \ k6_numbers \ np_1) = k6_numbers) \wedge ((k1_funct_1 \ k4_twoscomp \\
 & \ (k10_finseq_1 \ np_1 \ k6_numbers) = k6_numbers) \wedge ((k1_funct_1 \ k4_twoscomp \\
 & \ (k10_finseq_1 \ np_1 \ np_1) = k6_numbers))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k6_margrel1) \Rightarrow ((k1_funct_1 k2_twoscomp (k10_finseq_1 X0 X1) = \\ k1_funct_1 k13_twoscomp (k10_finseq_1 X0 X1)) \wedge ((k1_funct_1 k3_twoscomp \\ (k10_finseq_1 X0 X1) = k1_funct_1 k12_twoscomp (k10_finseq_1 X1 \\ X0)) \wedge (k1_funct_1 k4_twoscomp (k10_finseq_1 X0 X1) = k1_funct_1 \\ k11_twoscomp (k10_finseq_1 X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k6_margrel1) \Rightarrow ((k1_funct_1 k14_twoscomp (k10_finseq_1 X0 X1) = \\ k2_binarith X0 X1) \wedge ((k1_funct_1 k15_twoscomp (k10_finseq_1 X0 \\ X1) = k2_binarith (k9_margrel1 X0) X1) \wedge (k1_funct_1 k16_twoscomp \\ (k10_finseq_1 X0 X1) = k2_binarith (k9_margrel1 X0) (k9_margrel1 \\ X1)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k6_margrel1) \Rightarrow ((k1_funct_1 k8_twoscomp (k10_finseq_1 X0 X1) = \\ k1_binarith X0 X1) \wedge ((k1_funct_1 k9_twoscomp (k10_finseq_1 X0 \\ X1) = k1_binarith (k9_margrel1 X0) X1) \wedge (k1_funct_1 k10_twoscomp \\ (k10_finseq_1 X0 X1) = k1_binarith (k9_margrel1 X0) (k9_margrel1 \\ X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k6_margrel1) \Rightarrow ((k1_funct_1 k2_twoscomp (k10_finseq_1 X0 X1) = \\ k10_margrel1 X0 X1) \wedge ((k1_funct_1 k3_twoscomp (k10_finseq_1 X0 \\ X1) = k10_margrel1 (k9_margrel1 X0) X1) \wedge (k1_funct_1 k4_twoscomp \\ (k10_finseq_1 X0 X1) = k10_margrel1 (k9_margrel1 X0) (k9_margrel1 \\ X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k10_xtuple_0 (k10_finseq_1 X0 X1) = k2_tarSKI \quad (9)$$

Assume the following.

$$\begin{aligned} & (k1_funct_1 k14_twoscomp (k10_finseq_1 k6_numbers k6_numbers) = \\ & k6_numbers) \wedge ((k1_funct_1 k14_twoscomp (k10_finseq_1 k6_numbers \\ & np_1) = np_1) \wedge ((k1_funct_1 k14_twoscomp (k10_finseq_1 np_1 \\ & k6_numbers) = np_1) \wedge ((k1_funct_1 k14_twoscomp (k10_finseq_1 \\ & np_1 np_1) = k6_numbers) \wedge ((k1_funct_1 k15_twoscomp (k10_finseq_1 \\ & k6_numbers k6_numbers) = np_1) \wedge ((k1_funct_1 k15_twoscomp (k10_finseq_1 \\ & k6_numbers np_1) = k6_numbers) \wedge ((k1_funct_1 k15_twoscomp (k10_finseq_1 \\ & np_1 k6_numbers) = k6_numbers) \wedge (k1_funct_1 k15_twoscomp (k10_finseq_1 \\ & np_1 np_1) = np_1)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & (k1_funct_1 k8_twoscomp (k10_finseq_1 k6_numbers k6_numbers) = \\ & k6_numbers) \wedge ((k1_funct_1 k8_twoscomp (k10_finseq_1 k6_numbers \\ & np_1) = np_1) \wedge ((k1_funct_1 k8_twoscomp (k10_finseq_1 np_1 \\ & k6_numbers) = np_1) \wedge ((k1_funct_1 k8_twoscomp (k10_finseq_1 \\ & np_1 np_1) = np_1) \wedge ((k1_funct_1 k9_twoscomp (k10_finseq_1 \\ & k6_numbers k6_numbers) = np_1) \wedge ((k1_funct_1 k9_twoscomp (k10_finseq_1 \\ & k6_numbers np_1) = np_1) \wedge ((k1_funct_1 k9_twoscomp (k10_finseq_1 \\ & np_1 k6_numbers) = k6_numbers) \wedge ((k1_funct_1 k9_twoscomp (k10_finseq_1 \\ & np_1 np_1) = np_1) \wedge ((k1_funct_1 k10_twoscomp (k10_finseq_1 \\ & k6_numbers k6_numbers) = np_1) \wedge ((k1_funct_1 k10_twoscomp (k10_finseq_1 \\ & k6_numbers np_1) = np_1) \wedge ((k1_funct_1 k10_twoscomp (k10_finseq_1 \\ & np_1 k6_numbers) = np_1) \wedge (k1_funct_1 k10_twoscomp (k10_finseq_1 \\ & np_1 np_1) = k6_numbers)))))))))) \end{aligned} \quad (11)$$

Assume the following.

$$v1_xboole_0 np_0 \quad (12)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (13)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (k9_margrel1 (k9_margrel1 X0) = X0) \quad (14)$$

Assume the following.

$$\neg v1_xboole_0 k6_margrel1 \quad (15)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (m1_subset_1 (k9_margrel1 X0) k6_margrel1) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 X1 k6_margrel1)) \Rightarrow (m1_subset_1 (k2_binarith X0 X1) k6_margrel1) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 X1 k6_margrel1)) \Rightarrow (m1_subset_1 (k1_binarith X0 X1) k6_margrel1) \quad (18)$$

Assume the following.

$$(v1_funct_1 k15_twoscomp) \wedge ((v1_funct_2 k15_twoscomp (k4_finseq_2 np_2 k6_margrel1) k6_margrel1) \wedge (m1_subset_1 k15_twoscomp (k1_zfmisc_1 (k2_zfmisc_1 (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))) \quad (19)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))))) \Rightarrow ((X0 = k4_gfacirc1) \Leftrightarrow (\forall X1.(m1_subset_1 X1 k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1 X2 k6_margrel1) \Rightarrow (k1_funct_1 X0 (k10_finseq_1 X1 X2) = k2_binarith X1 (k9_margrel1 X2)))))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2_tarski X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \quad (21)$$

Assume the following.

$$k6_margrel1 = k2_tarski k6_numbers np_1 \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski X0 X1 = k2_tarski X1 X0 \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 X1 k6_margrel1)) \Rightarrow (k2_binarith X0 X1 = k2_binarith X1 X0) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k6_margrel1) \wedge (m1_subset_1 X1 k6_margrel1)) \Rightarrow (k10_margrel1 X0 X1 = k10_margrel1 X1 X0) \quad (25)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k6_margrel1) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k6_margrel1) \Rightarrow ((k1_funct_1 k4_gfacirc1 (k10_finseq_1 X0 X1) = \\ k2_binarith X0 (k9_margrel1 X1)) \wedge ((k1_funct_1 k4_gfacirc1 (k10_finseq_1 \\ X0 X1) = k1_funct_1 k15_twoscomp (k10_finseq_1 X0 X1)) \wedge ((k1_funct_1 \\ k4_gfacirc1 (k10_finseq_1 X0 X1) = k1_funct_1 k8_twoscomp (k10_finseq_1 \\ (k1_funct_1 k4_twoscomp (k10_finseq_1 X0 X1)) (k1_funct_1 k2_twoscomp \\ (k10_finseq_1 X0 X1)))) \wedge ((k1_funct_1 k4_gfacirc1 (k10_finseq_1 \\ k6_numbers k6_numbers) = np_1) \wedge ((k1_funct_1 k4_gfacirc1 (k10_finseq_1 \\ k6_numbers np_1) = k6_numbers) \wedge ((k1_funct_1 k4_gfacirc1 (k10_finseq_1 \\ np_1 k6_numbers) = k6_numbers) \wedge (k1_funct_1 k4_gfacirc1 (k10_finseq_1 \\ np_1 np_1) = np_1)))))))))) \end{aligned}$$