

t29_ftacell1 (TMGh-
pED16r484sYx2HGy9wQdQER3aKQME9i)

October 27, 2020

Let $v1_xtuple_0 : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k36_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_twoscomp : \iota$ be given. Let $k3_msafree2 : \iota \Rightarrow \iota$ be given. Let $k37_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_ftacell1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_ftacell1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_margrel1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_4 : \iota$ be given. Let $k17_ftacell1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_margrel1 : \iota \Rightarrow \iota$ be given. Let $k18_ftacell1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k24_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be

given. Let $k21_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2.(\neg v1_xtuple_0 X2) \Rightarrow (\forall X3.(\neg v1_xtuple_0 X3) \Rightarrow \\
& (\forall X4.(\neg (X4 \neq k4_tarski (k10_finseq_1 X3 (k36_gfacirc1 X0 \\
& X1 X2)) k2_twoscomp) \wedge (\neg X4 \in k3_msafree2 (k37_gfacirc1 X0 X1 X2)) \wedge \\
& (\exists X5.(m1_subset_1 X5 (k4_card_3 (u3_msualg_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4)))) \wedge (\exists X6.(m1_subset_1 \\
& X6 k6_margrel1) \wedge (\exists X7.(m1_subset_1 X7 k6_margrel1) \wedge (\exists X8. \\
& (m1_subset_1 X8 k6_margrel1) \wedge (\exists X9.(m1_subset_1 X9 k6_margrel1) \wedge \\
& (\exists X10.(m1_subset_1 X10 k6_margrel1) \wedge ((X6 = k1_funct_1 \\
& X5 X0) \wedge ((X7 = k1_funct_1 X5 X1) \wedge ((X8 = k1_funct_1 X5 X2) \wedge ((X9 = k1_funct_1 \\
& X5 X3) \wedge ((X10 = k1_funct_1 X5 X4) \wedge (\neg (k1_funct_1 (k5_facirc_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) (k24_gfacirc1 \\
& (k36_gfacirc1 X0 X1 X2) X4 X3) = k9_margrel1 (k2_binarith (k2_binarith \\
& (k2_binarith (k2_binarith (k9_margrel1 X6) X7) (k9_margrel1 X8)) \\
& X9) (k9_margrel1 X10)))) \wedge ((k1_funct_1 (k5_facirc_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) X0 = X6) \wedge ((k1_funct_1 \\
& (k5_facirc_1 (k13_ftacell1 X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 \\
& X3 X4) X5 np_4) X1 = X7) \wedge ((k1_funct_1 (k5_facirc_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) X2 = X8) \wedge ((k1_funct_1 \\
& (k5_facirc_1 (k13_ftacell1 X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 \\
& X3 X4) X5 np_4) X3 = X9) \wedge (k1_funct_1 (k5_facirc_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) X4 = X10))))))))))))))))))))) \\
& (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2.(\neg v1_xtuple_0 X2) \Rightarrow (\forall X3.(\neg v1_xtuple_0 X3) \Rightarrow \\
& (\forall X4.\neg(X4 \neq k4_tarski (k10_finseq_1 X3 (k36_gfacirc1 X0 \\
& X1 X2)) k2_twoscomp) \wedge ((\neg X4 \in k3_msafree2 (k37_gfacirc1 X0 X1 X2)) \wedge \\
& (\exists X5.(m1_subset_1 X5 (k4_card_3 (u3_msualg_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4)))) \wedge (\exists X6.(m1_subset_1 \\
& X6 k6_margrel1) \wedge (\exists X7.(m1_subset_1 X7 k6_margrel1) \wedge (\exists X8. \\
& (m1_subset_1 X8 k6_margrel1) \wedge (\exists X9.(m1_subset_1 X9 k6_margrel1) \wedge \\
& (\exists X10.(m1_subset_1 X10 k6_margrel1) \wedge ((X6 = k1_funct_1 \\
& X5 X0) \wedge ((X7 = k1_funct_1 X5 X1) \wedge ((X8 = k1_funct_1 X5 X2) \wedge ((X9 = k1_funct_1 \\
& X5 X3) \wedge ((X10 = k1_funct_1 X5 X4) \wedge (\neg(k1_funct_1 (k5_facirc_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) (k21_gfacirc1 \\
& (k36_gfacirc1 X0 X1 X2) X4 X3) = k1_binarith (k1_binarith (k10_margrel1 \\
& (k2_binarith (k2_binarith (k9_margrel1 X6) X7) (k9_margrel1 X8)) \\
& (k9_margrel1 X10)) (k10_margrel1 (k9_margrel1 X10) X9)) (k10_margrel1 \\
& X9 (k2_binarith (k2_binarith (k9_margrel1 X6) X7) (k9_margrel1 \\
& X8)))) \wedge ((k1_funct_1 (k5_facirc_1 (k13_ftacell1 X0 X1 X2 X3 X4) \\
& (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) X0 = X6) \wedge ((k1_funct_1 (k5_facirc_1 \\
& (k13_ftacell1 X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) \\
& X1 = X7) \wedge ((k1_funct_1 (k5_facirc_1 (k13_ftacell1 X0 X1 X2 X3 X4) \\
& (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) X2 = X8) \wedge ((k1_funct_1 (k5_facirc_1 \\
& (k13_ftacell1 X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) \\
& X3 = X9) \wedge (k1_funct_1 (k5_facirc_1 (k13_ftacell1 X0 X1 X2 X3 X4) (\\
& k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) X4 = X10))))))))))))))))) \\
& \hspace{15em} (2)
\end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.k18_ftacell1 \quad (3)$$

$$X0 X1 X2 X3 X4 = k24_gfacirc1 (k36_gfacirc1 X0 X1 X2) X4 X3$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.k17_ftacell1 \quad (4)$$

$$X0 X1 X2 X3 X4 = k21_gfacirc1 (k36_gfacirc1 X0 X1 X2) X4 X3$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2.(\neg v1_xtuple_0 X2) \Rightarrow (\forall X3.(\neg v1_xtuple_0 X3) \Rightarrow \\
& (\forall X4.(\neg(X4 \neq k4_tarski (k10_finseq_1 X3 (k36_gfacirc1 X0 \\
& X1 X2)) k2_twoscomp) \wedge ((\neg X4 \in k3_msafree2 (k37_gfacirc1 X0 X1 X2)) \wedge \\
& (\exists X5.(m1_subset_1 X5 (k4_card_3 (u3_msualg_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4)))) \wedge (\exists X6.(m1_subset_1 \\
& X6 k6_margrel1) \wedge (\exists X7.(m1_subset_1 X7 k6_margrel1) \wedge (\exists X8. \\
& (m1_subset_1 X8 k6_margrel1) \wedge (\exists X9.(m1_subset_1 X9 k6_margrel1) \wedge \\
& (\exists X10.(m1_subset_1 X10 k6_margrel1) \wedge ((X6 = k1_funct_1 \\
& X5 X0) \wedge ((X7 = k1_funct_1 X5 X1) \wedge ((X8 = k1_funct_1 X5 X2) \wedge ((X9 = k1_funct_1 \\
& X5 X3) \wedge ((X10 = k1_funct_1 X5 X4) \wedge (\neg(k1_funct_1 (k5_facirc_1 (k13_ftacell1 \\
& X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 X3 X4) X5 np_4) (k17_ftacell1 \\
& X0 X1 X2 X3 X4) = k1_binarith (k1_binarith (k10_margrel1 (k2_binarith \\
& (k2_binarith (k9_margrel1 X6) X7) (k9_margrel1 X8)) (k9_margrel1 \\
& X10)) (k10_margrel1 (k9_margrel1 X10) X9)) (k10_margrel1 X9 (k2_binarith \\
& (k2_binarith (k9_margrel1 X6) X7) (k9_margrel1 X8)))) \wedge (k1_funct_1 \\
& (k5_facirc_1 (k13_ftacell1 X0 X1 X2 X3 X4) (k14_ftacell1 X0 X1 X2 \\
& X3 X4) X5 np_4) (k18_ftacell1 X0 X1 X2 X3 X4) = k9_margrel1 (k2_binarith \\
& (k2_binarith (k2_binarith (k2_binarith (k9_margrel1 X6) X7) (\\
& k9_margrel1 X8)) X9) (k9_margrel1 X10)))))))))))))))))
\end{aligned}$$