

t28_compl_sp
(TMdMw5kmmDgxABvFvWCcAKPWRA2bNtYYjgf)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v7_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v8_compl_sp : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_topgen_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pcomps_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v4_card_3 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow ((v8_compl_sp X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (((v1_pcomps_1 X1 X0) \wedge (\forall X2. \\ (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((X2 \in X1) \Rightarrow (k1_card_1 \\ X2 = np_1)))) \Rightarrow (v1_finset_1 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge ((v7_pre_topc \\ X0) \wedge (l1_pre_topc X0)))) \Rightarrow ((\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (\neg(\neg v1_finset_1 X1) \wedge ((v4_card_3 X1) \wedge (v1_xboole_0 \\ (k2_topgen_1 X0 X1)))))) \Rightarrow (v8_compl_sp X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow ((\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))) \Rightarrow (((v1_pcomps_1 X1 X0) \wedge (\forall X2.(m1_subset_1 \\ X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((X2 \in X1) \Rightarrow (k1_card_1 X2 = np_1)))) \Rightarrow \\ (v1_finset_1 X1))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (\neg(\neg v1_finset_1 X1) \wedge (v1_xboole_0 (k2_topgen_1 \\ X0 X1)))))) \end{aligned} \tag{3}$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge ((v7_pre_topc X0) \wedge (l1_pre_topc X0)))) \Rightarrow ((v8_compl_sp X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\neg(\neg v1_finset_1 X1) \wedge (v1_xboole_0 (k2_topgen_1 X0 X1)))))$$