

t21_card_fil
(TMT2ZrCi48qyj1Dr7MwSj9Bc8Qa1hGsw8Qs)

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Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $m1_card_fil : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_card_fil : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_card_fil : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_card_fil : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(\neg v1_finset_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow ((X1 \in k4_card_fil X0) \Leftrightarrow (k1_card_1 (k6_subset_1 X0 X1) \in k1_card_1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.k6_subset_1 X0 X1 = k4_xboole_0 X0 X1 \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.m1_subset_1 (k6_subset_1 X0 X1) (k1_zfmisc_1 X0) \quad (3)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_card_fil X1 X0) \Rightarrow ((v3_card_fil X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow ((X2 \in X1) \vee (k6_subset_1 X0 X2 \in X1)))))) \quad (4)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_card_fil X1 X0) \Rightarrow ((v1_card_fil X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow ((X2 \in X1) \Rightarrow (k1_card_1 X2 = k1_card_1 X0))))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_finset_1 X0) \Rightarrow (k4_card_fil X0 = ReplSep (toset \\ (\lambda X1 : \iota.m1_subset_1 X1 (k1_zfmisc_1 X0))) (\lambda X1 : \iota.k1_card_1 \\ (k6_subset_1 X0 X1) \in k1_card_1 X0) (\lambda X1 : \iota.X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_finset_1 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (\neg X1 \in X0) \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_finset_1 X0) \Rightarrow (\forall X1.(m1_card_fil X1 X0) \Rightarrow \\ (((v1_card_fil X1 X0) \wedge (v3_card_fil X1 X0)) \Rightarrow (r1_tarski (k4_card_fil \\ X0) X1))) \end{aligned}$$