t10_card_fil (TM-cpzz1ZDbbGiGW5VmXkQ2Uuff6rp19TGmK)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_card\_fil : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_card\_fil : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_card\_fil : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_subset\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.r1\_xboole\_0\ (k4\_xboole\_0\ X0\ X1)\ X1 \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k4\_subset\_1\ X0\ X1\ (k3\_subset\_1\ X0\ X1) = k2\_subset\_1\ X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k9\_subset\_1\ X0\ X1\ X2 = k3\_xboole\_0\ X1\ X2) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge (m1\_card\_fil\ X1\ X0)) \Rightarrow (k1\_card\_fil\ X0\ X1 = k7\_setfam\_1\ X0\ X1) \tag{5}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m2\_card\_fil\ X1\ X0) \Rightarrow ((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))))) \tag{6}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_card\_fil\ X1\ X0)\Rightarrow((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0)))\Rightarrow(m1\_subset\_1\ (k7\_setfam\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_xboole\_0\ X0\ X1)\Leftrightarrow(k3\_xboole\_0\ X0\ X1 = k1\_xboole\_0) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0)))\Rightarrow((X2 = k7\_setfam\_1\ X0\ X1)\Leftrightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0))\Rightarrow((X3 \in X2)\Leftrightarrow(k3\_subset\_1\ X0\ X3 \in X1))))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(k3\_subset\_1\ X0\ X1 = k4\_xboole\_0\ X0\ X1) \tag{11}$$

Assume the following.

$$\forall X0.k2\_subset\_1\ X0 = X0 \tag{12}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))))\Rightarrow((m2\_card\_fil\ X1\ X0)\Leftrightarrow((\neg X0 \in X1)\wedge(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0))\Rightarrow((((X2 \in X1)\wedge(X3 \in X1))\Rightarrow(k4\_subset\_1\ X0\ X2\ X3 \in X1))\wedge(((X2 \in X1)\wedge(r1\_tarski\ X3\ X2))\Rightarrow(X3 \in X1)))))))) \tag{13}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))))\Rightarrow((m1\_card\_fil\ X1\ X0)\Leftrightarrow((\neg k1\_xboole\_0 \in X1)\wedge(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0))\Rightarrow((((X2 \in X1)\wedge(X3 \in X1))\Rightarrow(k9\_subset\_1\ X0\ X2\ X3 \in X1))\wedge(((X2 \in X1)\wedge(r1\_tarski\ X2\ X3))\Rightarrow(X3 \in X1)))))))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \tag{15}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m1\_card\_fil\ X1\ X0) \Rightarrow (\forall X2.(m2\_card\_fil\ X2\ X0) \Rightarrow ((\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0)) \Rightarrow (\neg(X3 \in X1) \wedge (X3 \in k1\_card\_fil\ X0\ X1))) \wedge (\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0)) \Rightarrow (\neg(X3 \in X2) \wedge (X3 \in k7\_setfam\_1\ X0\ X2))))))$$