t19_mssubfam (TMVMpL7tNo2tFwybunwzL6F5x6fd56Da4YS)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_relat\_1 : \iota \Rightarrow o$ be given. Let $v2\_finset\_1 : \iota \Rightarrow o$ be given. Let $k6\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\neg(X0 \in X1) \wedge (v1\_xboole\_0\ X1) \tag{1}$$

Assume the following.

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

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0) \wedge (((v1\_relat\_1\\ X1) \wedge ((v2\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge (\\ v1\_partfun1\ X1\ X0))))) \wedge (m1\_subset\_1\ X2\ X0))) \Rightarrow (\neg v1\_xboole\_0\ (\\ k1\_funct\_1\ X1\ X2))\end{gathered} \tag{3}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.((\neg v1\_finset\_1\ X0) \wedge (\neg v1\_xboole\_0\ X1)) \Rightarrow \\ (\neg v1\_finset\_1\ (k2\_zfmisc\_1\ X0\ X1))\end{gathered} \tag{4}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_partfun1\ X1\ X0)))) \wedge ((v1\_relat\_1\\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_partfun1\ X2\ X0))))) \Rightarrow \\ ((v1\_relat\_1\ (k6\_pboole\ X0\ X1\ X2)) \wedge ((v4\_relat\_1\ (k6\_pboole\ X0\\ X1\ X2)\ X0) \wedge ((v1\_funct\_1\ (k6\_pboole\ X0\ X1\ X2)) \wedge (v1\_partfun1\ (k6\_pboole\\ X0\ X1\ X2)\ X0))))\end{gathered} \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge(v1\_funct\_1\ X1)))\Rightarrow((v2\_finset\_1\ X1)\Leftrightarrow(\forall X2.(X2\in X0)\Rightarrow(v1\_finset\_1\ (k1\_funct\_1\ X1\ X2))))\tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0))))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ X0)\wedge((v1\_funct\_1\ X3)\wedge(v1\_partfun1\ X3\ X0))))\Rightarrow((X3 = k6\_pboole\ X0\ X1\ X2)\Leftrightarrow(\forall X4.(X4\in X0)\Rightarrow(k1\_funct\_1\ X3\ X4 = k2\_zfmisc\_1\ (k1\_funct\_1\ X1\ X4)\ (k1\_funct\_1\ X2\ X4))))))\tag{7}$$

Theorem 1

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0))))\Rightarrow(((v2\_relat\_1\ X1)\wedge(v2\_finset\_1\ (k6\_pboole\ X0\ X2\ X1)))\Rightarrow(v2\_finset\_1\ X2)))$$