t20_pralg_3 (TMSmcMthc-SZH4aMnNvmonTEK1DkrqB9oowT)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $m1\_pralg\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $v4\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14\_pralg\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_funct\_6 : \iota \Rightarrow \iota$ be given. Let $k5\_pralg\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k4\_card\_3 : \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_funct\_6 : \iota \Rightarrow \iota$ be given. Let $k12\_pralg\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4\_funct\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funcop\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow ((X0 \in k4\_card\_3\ X1) \Leftrightarrow ((k9\_xtuple\_0\ X0 = k9\_xtuple\_0\ X1) \wedge (\forall X2.(X2 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1\ X0\ X2 \in k1\_funct\_1\ X1\ X2))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1)))\Rightarrow(\forall X2.(m1\_pralg\_2\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u4\_struct\_0\ X1))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k3\_msualg\_1\ X1\ X3\ (k14\_pralg\_2\ X0\ X1\ X2)))\Rightarrow((k1\_msualg\_1\ X1\ X3\neq k1\_xboole\_0)\Rightarrow(k10\_funct\_6\ X4\in k4\_card\_3\ (k2\_funct\_6\ (k12\_pralg\_2\ X0\ X1\ X2\ X3)))))))) \tag{4}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1)))\Rightarrow(\forall X2.(m1\_pralg\_2\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u4\_struct\_0\ X1))\Rightarrow((k9\_xtuple\_0\ (k2\_funct\_6\ (k12\_pralg\_2\ X0\ X1\ X2\ X3))=X0)\wedge(\forall X4.(m1\_subset\_1\ X4\ X0)\Rightarrow(k1\_funct\_1\ (k2\_funct\_6\ (k12\_pralg\_2\ X0\ X1\ X2\ X3))\ X4=k3\_msualg\_1\ X1\ X3\ (k5\_pralg\_2\ X0\ X1\ X2\ X4))))))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1)))\wedge(m1\_pralg\_2\ X2\ X0\ X1))\Rightarrow(v4\_msualg\_1\ (k14\_pralg\_2\ X0\ X1\ X2)\ X1) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0)))\wedge(((v4\_msualg\_1\ X1\ X0)\wedge(l3\_msualg\_1\ X1\ X0))\wedge(m1\_subset\_1\ X2\ (u4\_struct\_0\ X0))))\Rightarrow(v4\_funct\_1\ (k3\_msualg\_1\ X0\ X2\ X1)) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow((v1\_relat\_1\ (k2\_funct\_6\ X0))\wedge(v1\_funct\_1\ (k2\_funct\_6\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1)))\wedge(m1\_pralg\_2\ X2\ X0\ X1))\Rightarrow(l3\_msualg\_1\ (k14\_pralg\_2\ X0\ X1\ X2)\ X1) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1)))\wedge((m1\_pralg\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (u4\_struct\_0\ X1))))\Rightarrow((v1\_relat\_1\ (k12\_pralg\_2\ X0\ X1\ X2\ X3))\wedge((v4\_relat\_1\ (k12\_pralg\_2\ X0\ X1\ X2\ X3)\ X0)\wedge((v1\_funct\_1\ (k12\_pralg\_2\ X0\ X1\ X2\ X3))\wedge((v1\_partfun1\ (k12\_pralg\_2\ X0\ X1\ X2\ X3)\ X0)\wedge(v1\_funcop\_1\ (k12\_pralg\_2\ X0\ X1\ X2\ X3)))))) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow((v1\_relat\_1\ (k10\_funct\_6\ X0))\wedge((v1\_funct\_1\ (k10\_funct\_6\ X0))\wedge(v1\_funcop\_1\ (k10\_funct\_6\ X0)))) \tag{11}$$

Assume the following.

$$\forall X0.(v4\_funct\_1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))) \tag{12}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1)))\Rightarrow(\forall X2.(m1\_pralg\_2\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u4\_struct\_0\ X1))\Rightarrow((k1\_msualg\_1\ X1\ X4\neq k1\_xboole\_0)\Rightarrow(\forall X5.((v4\_msualg\_1\ X5\ X1)\wedge(l3\_msualg\_1\ X5\ X1))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (k3\_msualg\_1\ X1\ X4\ (k14\_pralg\_2\ X0\ X1\ X2)))\Rightarrow(m1\_subset\_1\ (k1\_funct\_1\ (k10\_funct\_6\ X6)\ X3)\ (k3\_msualg\_1\ X1\ X4\ (k5\_pralg\_2\ X0\ X1\ X2\ X3))))))))))$$