t20_group_9 (TMZLN-fJQLN499aJTEMeAiVXAqGbkx4KSW2c)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_group\_1 : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v3\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k17\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k15\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.k3\_xboole\_0\ (k3\_xboole\_0\ X0\ X1)\ X2 = k3\_xboole\_0\ X0\ (k3\_xboole\_0\ X1\ X2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k9\_subset\_1\ X0\ X1\ X2 = k3\_xboole\_0\ X1\ X2) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v2\_group\_1\ X1) \wedge ((v3\_group\_1\ X1) \wedge ((v3\_group\_9\ X1\ X0) \wedge (l1\_group\_9\ X1\ X0))))) \Rightarrow (\forall X2.((v2\_group\_9\ X2\ X0) \wedge (m1\_group\_9\ X2\ X0\ X1)) \Rightarrow (\forall X3.((v2\_group\_9\ X3\ X0) \wedge (m1\_group\_9\ X3\ X0\ X1)) \Rightarrow ((u1\_struct\_0\ X2 = u1\_struct\_0\ X3) \Rightarrow (X2 = X3)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X1) \wedge ((v2\_group\_1\ X1) \wedge ((v3\_group\_1\ X1) \wedge ((v3\_group\_9\ X1\ X0) \wedge (l1\_group\_9\ X1\ X0))))) \wedge ((m1\_group\_9\ X2\ X0\ X1) \wedge (m1\_group\_9\ X3\ X0\ X1))) \Rightarrow ((v2\_group\_9\ (k17\_group\_9\ X0\ X1\ X2\ X3)\ X0) \wedge (m1\_group\_9\ (k17\_group\_9\ X0\ X1\ X2\ X3)\ X0\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X1)\wedge((v2\_group\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge((v3\_group\_9\ X1\ X0)\wedge(l1\_group\_9\ X1\ X0)))))\wedge(m1\_group\_9\ X2\ X0\ X1))\Rightarrow(m1\_subset\_1\ (k15\_group\_9\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_group\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge((v3\_group\_9\ X1\ X0)\wedge(l1\_group\_9\ X1\ X0)))))\Rightarrow(\forall X2.(m1\_group\_9\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_group\_9\ X3\ X0\ X1)\Rightarrow(\forall X4.((v2\_group\_9\ X4\ X0)\wedge(m1\_group\_9\ X4\ X0\ X1))\Rightarrow((X4 = k17\_group\_9\ X0\ X1\ X2\ X3)\Leftrightarrow(u1\_struct\_0\ X4 = k9\_subset\_1\ (u1\_struct\_0\ X1)\ (k15\_group\_9\ X0\ X1\ X2)\ (k15\_group\_9\ X0\ X1\ X3))))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_group\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge((v3\_group\_9\ X1\ X0)\wedge(l1\_group\_9\ X1\ X0)))))\Rightarrow(\forall X2.(m1\_group\_9\ X2\ X0\ X1)\Rightarrow(k15\_group\_9\ X0\ X1\ X2 = u1\_struct\_0\ X2)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X1)\wedge((v2\_group\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge((v3\_group\_9\ X1\ X0)\wedge(l1\_group\_9\ X1\ X0)))))\wedge((m1\_group\_9\ X2\ X0\ X1)\wedge(m1\_group\_9\ X3\ X0\ X1)))\Rightarrow(k17\_group\_9\ X0\ X1\ X2\ X3 = k17\_group\_9\ X0\ X1\ X3\ X2) \tag{9}$$

Theorem 1

$$\forall X0.\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_group\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge((v3\_group\_9\ X1\ X0)\wedge(l1\_group\_9\ X1\ X0)))))\Rightarrow(\forall X2.(m1\_group\_9\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_group\_9\ X3\ X0\ X1)\Rightarrow(\forall X4.(m1\_group\_9\ X4\ X0\ X1)\Rightarrow(k17\_group\_9\ X0\ X1\ (k17\_group\_9\ X0\ X1\ X2\ X3)\ X4 = k17\_group\_9\ X0\ X1\ X2\ (k17\_group\_9\ X0\ X1\ X3\ X4)))))$$