t11_metric_3 (TMaRiMjqDEpgN77WHWMDmyZ3fB7poZfUPnT)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v6\_metric\_1 : \iota \Rightarrow o$ be given. Let $v7\_metric\_1 : \iota \Rightarrow o$ be given. Let $v8\_metric\_1 : \iota \Rightarrow o$ be given. Let $v9\_metric\_1 : \iota \Rightarrow o$ be given. Let $l1\_metric\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_metric\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k3\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k7\_square\_1 : \iota \Rightarrow \iota$ be given. Let $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_square\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\neg(X0 \neq k1\_xboole\_0) \wedge ((X1 \neq k1\_xboole\_0) \wedge (\neg\forall X2.(m1\_subset\_1\ X2\ (k2\_zfmisc\_1\ X0\ X1)) \Rightarrow (X2 = k4\_tarski\ (k1\_xtuple\_0\ X2)\ (k2\_xtuple\_0\ X2)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0) \wedge ((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X2\ (k2\_zfmisc\_1\ X0\ X1)))) \Rightarrow (k3\_domain\_1\ X0\ X1\ X2 = k2\_xtuple\_0\ X2) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0) \wedge ((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X2\ (k2\_zfmisc\_1\ X0\ X1)))) \Rightarrow (k2\_domain\_1\ X0\ X1\ X2 = k1\_xtuple\_0\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0) \wedge ((\neg v1\_xboole\_0\ X1) \wedge ((m1\_subset\_1\ X2\ X0) \wedge (m1\_subset\_1\ X3\ X1)))) \Rightarrow (k1\_domain\_1\ X0\ X1\ X2\ X3 = k4\_tarski\ X2\ X3) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{5}$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \tag{6}$$

Assume the following.

$$\forall X0.(l1\_metric\_1\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X2\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow(m1\_subset\_1\ (k3\_domain\_1\ X0\ X1\ X2)\ X1) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X2\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow(m1\_subset\_1\ (k2\_domain\_1\ X0\ X1\ X2)\ X0) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))))))\wedge((\neg v2\_struct\_0\ X1)\wedge((v6\_metric\_1\ X1)\wedge((v7\_metric\_1\ X1)\wedge((v8\_metric\_1\ X1)\wedge((v9\_metric\_1\ X1)\wedge(l1\_metric\_1\ X1)))))))\Rightarrow((v1\_funct\_1\ (k10\_metric\_3\ X0\ X1))\wedge((v1\_funct\_2\ (k10\_metric\_3\ X0\ X1)\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\ k1\_numbers)\wedge(m1\_subset\_1\ (k10\_metric\_3\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\ k1\_numbers))))) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v6\_metric\_1\ X1)\wedge((v7\_metric\_1\ X1)\wedge((v8\_metric\_1\ X1)\wedge((v9\_metric\_1\ X1)\wedge(l1\_metric\_1\ X1))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\ k1\_numbers)))))\Rightarrow((X2 = k10\_metric\_3\ X0\ X1)\Leftrightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X1))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X1))\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\Rightarrow(\forall X8.(m1\_subset\_1\ X8\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\Rightarrow(((X7 = k1\_domain\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X3\ X5)\wedge(X8 = k1\_domain\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X4\ X6))\Rightarrow(k1\_metric\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ X2\ X7\ X8 = k7\_square\_1\ (k7\_real\_1\ (k5\_square\_1\ (k4\_metric\_1\ X0\ X3\ X4))\ (k5\_square\_1\ (k4\_metric\_1\ X1\ X5\ X6))))))))))))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v8\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(k4\_metric\_1\ X0\ X1\ X2 = k4\_metric\_1\ X0\ X2\ X1) \tag{12}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v6\_metric\_1\ X1)\wedge((v7\_metric\_1\ X1)\wedge((v8\_metric\_1\ X1)\wedge((v9\_metric\_1\ X1)\wedge(l1\_metric\_1\ X1))))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))\Rightarrow(k1\_metric\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k10\_metric\_3\ X0\ X1)\ X2\ X3 = k1\_metric\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\ (k10\_metric\_3\ X0\ X1)\ X3\ X2))))$$