# t16_domain_1 (TMWfQJKbyEtQeGoP1ZAujLZAviisZX45c7m)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_mcart\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_mcart\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_mcart\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_mcart\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ \forall X6.\forall X7.(k6\_xtuple\_0\ X0\ X1\ X2\ X3 \in k4\_zfmisc\_1\ X4\ X5\ X6\ X7) \Leftrightarrow ((X0 \in X4) \wedge ((X1 \in X5) \wedge ((X2 \in X6) \wedge (X3 \in X7)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\neg(X0 \in k4\_zfmisc\_1\ X1\ X2\ X3\ X4) \wedge (\forall X5.\forall X6.\forall X7.\forall X8.\ \neg(X5 \in X1) \wedge ((X6 \in X2) \wedge ((X7 \in X3) \wedge ((X8 \in X4) \wedge (X0 = k6\_xtuple\_0\ X5\ X6\ X7\ X8))))) \tag{2}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.(\neg v1\_xboole\_0\ X2) \Rightarrow (\forall X3.(\neg v1\_xboole\_0\ X3) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (k4\_zfmisc\_1\ X0\ X1\ X2\ X3)) \Rightarrow (\forall X5.\ \forall X6.\forall X7.\forall X8.(X4 = k6\_xtuple\_0\ X5\ X6\ X7\ X8) \Rightarrow ((k4\_mcart\_1\ X0\ X1\ X2\ X3\ X4 = X5) \wedge ((k5\_mcart\_1\ X0\ X1\ X2\ X3\ X4 = X6) \wedge ((k6\_mcart\_1\ X0\ X1\ X2\ X3\ X4 = X7) \wedge (k7\_mcart\_1\ X0\ X1\ X2\ X3\ X4 = X8)))))))))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.(\neg v1\_xboole\_0\ X2) \Rightarrow (\forall X3.(\neg v1\_xboole\_0\ X3) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (k4\_zfmisc\_1\ X0\ X1\ X2\ X3)) \Rightarrow (X4 = k6\_xtuple\_0\ (k4\_mcart\_1\ X0\ X1\ X2\ X3\ X4)\ (k5\_mcart\_1\ X0\ X1\ X2\ X3\ X4)\ (k6\_mcart\_1\ X0\ X1\ X2\ X3\ X4)\ (k7\_mcart\_1\ X0\ X1\ X2\ X3\ X4)))))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.(\neg v1\_xboole\_0\ X2)\Rightarrow(\forall X3.(\neg v1\_xboole\_0\ X3)\Rightarrow(\forall X4.(\neg v1\_xboole\_0\ X4)\Rightarrow((X0 \in k4\_zfmisc\_1\ X1\ X2\ X3\ X4)\Leftrightarrow(\exists X5.(m1\_subset\_1\ X5\ X1)\wedge(\exists X6.(m1\_subset\_1\ X6\ X2)\wedge(\exists X7.(m1\_subset\_1\ X7\ X3)\wedge(\exists X8.(m1\_subset\_1\ X8\ X4)\wedge(X0 = k6\_xtuple\_0\ X5\ X6\ X7\ X8)))))))))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X2)\wedge((\neg v1\_xboole\_0\ X3)\wedge(m1\_subset\_1\ X4\ (k4\_zfmisc\_1\ X0\ X1\ X2\ X3))))))\Rightarrow(k7\_mcart\_1\ X0\ X1\ X2\ X3\ X4 = k2\_xtuple\_0\ X4) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\forall X6.\forall X7.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X2)\wedge((\neg v1\_xboole\_0\ X3)\wedge((m1\_subset\_1\ X4\ X0)\wedge((m1\_subset\_1\ X5\ X1)\wedge((m1\_subset\_1\ X6\ X2)\wedge(m1\_subset\_1\ X7\ X3))))))))\Rightarrow(k5\_domain\_1\ X0\ X1\ X2\ X3\ X4\ X5\ X6\ X7 = k6\_xtuple\_0\ X4\ X5\ X6\ X7) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X2)\wedge(\neg v1\_xboole\_0\ X3))))\Rightarrow(\neg v1\_xboole\_0\ (k4\_zfmisc\_1\ X0\ X1\ X2\ X3)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X2)\wedge((\neg v1\_xboole\_0\ X3)\wedge(m1\_subset\_1\ X4\ (k4\_zfmisc\_1\ X0\ X1\ X2\ X3))))))\Rightarrow(m1\_subset\_1\ (k7\_mcart\_1\ X0\ X1\ X2\ X3\ X4)\ X3) \tag{9}$$

**Theorem 1**

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.(\neg v1\_xboole\_0\ X2)\Rightarrow(\forall X3.(\neg v1\_xboole\_0\ X3)\Rightarrow(\forall X4.(\neg v1\_xboole\_0\ X4)\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (k4\_zfmisc\_1\ X1\ X2\ X3\ X4))\Rightarrow((X0 = k7\_mcart\_1\ X1\ X2\ X3\ X4\ X5)\Leftrightarrow(\forall X6.(m1\_subset\_1\ X6\ X1)\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ X2)\Rightarrow(\forall X8.(m1\_subset\_1\ X8\ X3)\Rightarrow(\forall X9.(m1\_subset\_1\ X9\ X4)\Rightarrow((X5 = k5\_domain\_1\ X1\ X2\ X3\ X4\ X6\ X7\ X8\ X9)\Rightarrow(X0 = X9)))))))))))$$