

# t4\_borsuk\_5 (TMR- wJTkhBcw5oidFDSpWPDzRXiY5x5mFJp1)

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Let  $r5_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_card_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_7 : \iota$  be given. Let  $v1\_finset_1 : \iota \Rightarrow o$  be given. Let  $k2\_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $r4_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_6 : \iota$  be given. Let  $v2\_xxreal_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_subset_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (v1\_finset_1 X1) \Rightarrow ((\neg X0 \in X1) \Rightarrow (k5\_card_1 (k2\_xboole_0 X1 (k1\_tarski X0)) = k2\_nat_1 (k5\_card_1 X1) np\_1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. (r4_zfmisc_1 X0 X1 X2 X3 X4 X5) \Rightarrow (k5\_card_1 (k4\_enumset1 X0 X1 X2 X3 X4 X5) = np\_6) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \forall X6. k5\_enumset1 X0 X1 X2 X3 X4 X5 X6 = k2\_xboole_0 (k4\_enumset1 X0 X1 X2 X3 X4 X5) (k1\_tarski X6) \quad (3)$$

Assume the following.

$$((v2\_xxreal_0 np\_6) \wedge (m2\_subset_1 np\_6 k1\_numbers k5\_numbers)) \wedge ((m1\_subset_1 np\_6 k5\_numbers) \wedge (m1\_subset_1 np\_6 k1\_numbers)) \quad (4)$$

Assume the following.

$$((v2\_xxreal_0 np\_1) \wedge (m2\_subset_1 np\_1 k1\_numbers k5\_numbers)) \wedge ((m1\_subset_1 np\_1 k5\_numbers) \wedge (m1\_subset_1 np\_1 k1\_numbers)) \quad (5)$$

Assume the following.

$$k2\_xcmplx\_0 \text{ } np\_1 \text{ } np\_6 = np\_7 \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 \text{ } X0 \text{ } k5\_numbers)\wedge(v7\_ordinal1 \text{ } X1))\Rightarrow(k2\_nat\_1 \text{ } X0 \text{ } X1 = k2\_xcmplx\_0 \text{ } X0 \text{ } X1) \quad (8)$$

Assume the following.

$$v6\_membered \text{ } k4\_ordinal1 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \quad (10)$$

$$v1\_finset\_1 (k4\_enumset1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3 \text{ } X4 \text{ } X5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \quad (11)$$

$$\forall X6.(r5\_zfmisc\_1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3 \text{ } X4 \text{ } X5 \text{ } X6)\Leftrightarrow((X0\neq X1)\wedge((X0\neq X2)\wedge$$

$$((X0\neq X3)\wedge((X0\neq X4)\wedge((X0\neq X5)\wedge((X0\neq X6)\wedge((X1\neq X2)\wedge((X1\neq X3)\wedge$$

$$(X1\neq X4)\wedge((X1\neq X5)\wedge((X1\neq X6)\wedge((X2\neq X3)\wedge((X2\neq X4)\wedge((X2\neq X5)\wedge(($$

$$X2\neq X6)\wedge((X3\neq X4)\wedge((X3\neq X5)\wedge((X3\neq X6)\wedge((X4\neq X5)\wedge((X4\neq X6)\wedge(X5\neq$$

$$X6))))))))))))))))))$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \quad (12)$$

$$(r4\_zfmisc\_1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3 \text{ } X4 \text{ } X5)\Leftrightarrow((X0\neq X1)\wedge((X0\neq X2)\wedge((X0\neq X3)\wedge(($$

$$X0\neq X4)\wedge((X0\neq X5)\wedge((X1\neq X2)\wedge((X1\neq X3)\wedge((X1\neq X4)\wedge((X1\neq X5)\wedge((X2\neq$$

$$X3)\wedge((X2\neq X4)\wedge((X2\neq X5)\wedge((X3\neq X4)\wedge((X3\neq X5)\wedge(X4\neq X5))))))))))))$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \quad (13)$$

$$\forall X6.(X6 = k4\_enumset1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3 \text{ } X4 \text{ } X5)\Leftrightarrow(\forall X7.(X7 \in X6)\Leftrightarrow$$

$$(\neg(X7\neq X0)\wedge((X7\neq X1)\wedge((X7\neq X2)\wedge((X7\neq X3)\wedge((X7\neq X4)\wedge(X7\neq X5))))))$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 \text{ } X0 \text{ } k5\_numbers)\wedge(v7\_ordinal1 \text{ } X1))\Rightarrow(k2\_nat\_1 \text{ } X0 \text{ } X1 = k2\_nat\_1 \text{ } X1 \text{ } X0) \quad (14)$$

Assume the following.

$$\forall X0.(v6\_membered \text{ } X0)\Rightarrow(\forall X1.(m1\_subset\_1 \text{ } X1 \text{ } X0)\Rightarrow(v7\_ordinal1 \text{ } X1)) \quad (15)$$

**Theorem 1**

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.$$
$$\forall X6.(r5\_zfmisc\_1\ X0\ X1\ X2\ X3\ X4\ X5\ X6)\Rightarrow(k5\_card\_1\ (k5\_enum.set1$$
$$X0\ X1\ X2\ X3\ X4\ X5\ X6) = np\_7)$$