

t2_axioms
(TMQ7CJXC3c5wKfnFjEhKEhJPZjNYbA9DVzy)

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Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_arytm_2 : \iota$ be given. Let $k7_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k1_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_arytm_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$r1_tarski k4_ordinal1 k2_arytm_2 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1. (m1_subset_1 X1 k2_arytm_2) \Rightarrow (((X0 \in k4_ordinal1) \wedge (X1 \in k4_ordinal1)) \Rightarrow (k7_arytm_2 X1 X0 \in k4_ordinal1))) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.(v1_xreal_0 X2) \Rightarrow (\forall X3.(v1_xreal_0 \\ & X3) \Rightarrow (((X0 = X2) \wedge (X1 = X3)) \Rightarrow (k1_arytm_0 X0 X1 = k2_xcmplx_0 X2 X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow (v1_xreal_0 (k2_xcmplx_0 X0 X1)) \quad (10)$$

Assume the following.

$$\neg v1_xboole_0 k2_arytm_2 \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Rightarrow (m1_subset_1 X2 X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Leftrightarrow (X0 \in k1_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (((\\ & X0 \in k2_arytm_2) \wedge (X1 \in k2_arytm_2) \Rightarrow ((X2 = k1_arytm_0 X0 X1) \Leftrightarrow (\exists X3. \\ & (m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 X4 k2_arytm_2) \wedge \\ & ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = k7_arytm_2 X3 X4)))))) \wedge (((X0 \in k2_arytm_2) \wedge \\ & (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) k2_arytm_2)) \Rightarrow ((X2 = k1_arytm_0 \\ & X0 X1) \Leftrightarrow (\exists X3.(m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(\\ & m1_subset_1 X4 k2_arytm_2) \wedge ((X0 = X3) \wedge ((X1 = k4_tarski k6_numbers \\ & X4) \wedge (X2 = k2_arytm_1 X3 X4)))))) \wedge (((X1 \in k2_arytm_2) \wedge (X0 \in k2_zfmisc_1 \\ & (k1_tarski k6_numbers) k2_arytm_2)) \Rightarrow ((X2 = k1_arytm_0 X0 X1) \Leftrightarrow \\ & (\exists X3.(m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 \\ & X4 k2_arytm_2) \wedge ((X0 = k4_tarski k6_numbers X3) \wedge ((X1 = X4) \wedge (X2 = \\ & k2_arytm_1 X4 X3)))))) \wedge (\neg(\neg(X0 \in k2_arytm_2) \wedge (X1 \in k2_arytm_2)) \wedge \\ & ((\neg(X0 \in k2_arytm_2) \wedge (X1 \in k2_zfmisc_1 (k1_tarski k6_numbers) \\ & k2_arytm_2)) \wedge (\neg(X1 \in k2_arytm_2) \wedge (X0 \in k2_zfmisc_1 (k1_tarski \\ & k6_numbers) k2_arytm_2)) \wedge (\neg(X2 = k1_arytm_0 X0 X1) \Leftrightarrow (\exists X3. \\ & (m1_subset_1 X3 k2_arytm_2) \wedge (\exists X4.(m1_subset_1 X4 k2_arytm_2) \wedge \\ & ((X0 = k4_tarski k6_numbers X3) \wedge ((X1 = k4_tarski k6_numbers X4) \wedge \\ & (X2 = k4_tarski k6_numbers (k7_arytm_2 X3 X4))))))))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(k2_xcmplx_0 X0 X1 = k2_xcmplx_0 X1 X0) \quad (15)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xcmplx_0 X0) \quad (16)$$

Theorem 1

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(\forall X1.(v1_xreal_0 X1)\Rightarrow(((X0 \in k5_numbers)\wedge(X1 \in k5_numbers))\Rightarrow(k2_xcmplx_0 X0 X1 \in k5_numbers)))$$