

l23_heyting2

(TMVZ2LdNqVHNDSqVkpJaxtQSkCzHzSSzP1r)

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Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_substlat : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_finsub_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k5_finsub_1 \\ & (k4_partfun1 X0 X1))) \Rightarrow (\forall X3. \forall X4. ((X2 \in k1_substlat \\ & X0 X1) \wedge ((X3 \in X2) \wedge ((X4 \in X2) \wedge (r1_tarski X3 X4)))) \Rightarrow (X3 = X4)) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 (k5_finsub_1 X0)) \wedge (v4_finsub_1 (k5_finsub_1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\neg v1_xboole_0 (k1_substlat X0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 X2 X0 X1) \Rightarrow (m1_subset_1 X2 X0)) \quad (9)$$

Assume the following.

$$\forall X0.v4_finsub_1 (k5_finsub_1 X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.m1_subset_1 (k1_substlat X0 X1) (k1_zfmisc_1 (k5_finsub_1 (k4_partfun1 X0 X1))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(v4_finsub_1 X1) \Rightarrow ((X1 = k5_finsub_1 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow ((r1_tarski X2 X0) \wedge (v1_finset_1 X2)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.k1_substlat X0 X1 = \text{ReplSep } (\text{toset } (\lambda X2 : \\ \iota.m1_subset_1 X2 (k5_finsub_1 (k4_partfun1 X0 X1)))) (\lambda X2 : \\ \iota.(\forall X3.(X3 \in X2) \Rightarrow (v1_finset_1 X3)) \wedge (\forall X3.(m1_subset_1 \\ X3 (k4_partfun1 X0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k4_partfun1 \\ X0 X1)) \Rightarrow (((X3 \in X2) \wedge ((X4 \in X2) \wedge (r1_tarski X3 X4))) \Rightarrow (X3 = X4)))))) \\ (\lambda X2 : \iota.X2) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_finset_1 X1)) \quad (15)$$

Theorem 1

$$\forall X0.\forall X1.(v1_finset_1 X1) \Rightarrow (\forall X2.(m2_subset_1 X2 (k5_finsub_1 (k4_partfun1 X0 X1)) (k1_substlat X0 X1)) \Rightarrow (\forall X3.(r1_tarski X3 X2) \Rightarrow (X3 \in k1_substlat X0 X1)))$$