

t2_heyting2

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October 27, 2020

Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k1_substlat : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_finset_1 : \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow (k2_setwiseo X0 X1 = k1_tarski X1) \quad (2)$$

Assume the following.

$$\forall X0. (v1_finset_1 X0) \Rightarrow (v5_finset_1 (k1_tarski X0)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \neg v1_xboole_0 (k4_partfun1 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow (m1_subset_1 (k2_setwiseo X0 X1) (k5_finsub_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. k1_substlat X0 X1 = ReplSep (toset (\lambda X2 : \\ & \quad \iota. m1_subset_1 X2 (k5_finsub_1 (k4_partfun1 X0 X1)))) (\lambda X2 : \\ & \quad \iota. (\forall X3. (X3 \in X2) \Rightarrow (v1_finset_1 X3)) \wedge (\forall X3. (m1_subset_1 \\ & \quad X3 (k4_partfun1 X0 X1)) \Rightarrow (\forall X4. (m1_subset_1 X4 (k4_partfun1 \\ & \quad X0 X1)) \Rightarrow (((X3 \in X2) \wedge ((X4 \in X2) \wedge (r1_tarski X3 X4))) \Rightarrow (X3 = X4)))))) \\ & \quad (\lambda X2 : \iota. X2) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v5_finset_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_finset_1 X1)) \quad (8)$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.((v1_finset_1 X2) \wedge (m1_subset_1 X2 (k4_partfun1 X0 X1))) \Rightarrow (k1_tarski X2 \in k1_substlat X0 X1)$$