

t7_substlat
(TMHWgfLypSxhU4G87jcLjhuHggr1fBtFXQM)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

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.

$$\forall X0. (\neg v1_xboole_0 (k5_finsub_1 X0)) \wedge (v4_finsub_1 (k5_finsub_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0. v4_finsub_1 (k5_finsub_1 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (v4_finsub_1 X1) \Rightarrow ((X1 = k5_finsub_1 X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow ((r1_tarski X2 X0) \wedge (v1_finset_1 X2)))) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k5_finsub_1 \\ & (k4_partfun1 X0 X1))) \Rightarrow (k3_substlat X0 X1 X2 = \text{ReplSep } (\text{toset } (\lambda X3 : \\ & \quad \iota. m1_subset_1 X3 (k4_partfun1 X0 X1))) (\lambda X3 : \iota. (v1_finset_1 \\ & X3) \wedge (\forall X4. (m1_subset_1 X4 (k4_partfun1 X0 X1)) \Rightarrow (((X4 \in X2) \wedge \\ & \quad (r1_tarski X4 X3)) \Leftrightarrow (X4 = X3)))) (\lambda X3 : \iota. X3)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1_tarski\ X0\ X1) \wedge (r1_tarski\ X1\ X0)) \quad (8)$$

Assume the following.

$$\forall X0.(v1_finset_1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0)) \Rightarrow (v1_finset_1\ X1)) \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k5_finsub_1 \\ & (k4_partfun1\ X0\ X1))) \Rightarrow (\forall X3.(v1_finset_1\ X3) \Rightarrow (((X3 \in X2) \wedge \\ & (\forall X4.(v1_finset_1\ X4) \Rightarrow (((X4 \in X2) \wedge (r1_tarski\ X4\ X3)) \Rightarrow (\\ & X4 = X3)))))) \Rightarrow (X3 \in k3_substlat\ X0\ X1\ X2)) \end{aligned}$$