

# t1\_substlat (TMFt- SZvsB6Sp75p61zmCqASkmmmyCmqdKPF4)

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Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_substlat : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_finsub\_1 : \iota \Rightarrow o$  be given. Let  $k5\_finsub\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k4\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. r1\_tarski k1\_xboole\_0 X0 \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (3)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (4)$$

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.

$$\begin{aligned} \forall X0. \forall X1. k1\_substlat X0 X1 = & \text{ReplSep (toset } (\lambda X2 : \\ & \iota. m1\_subset\_1 X2 (k5\_finsub\_1 (k4\_partfun1 X0 X1)))) (\lambda X2 : \\ & \iota. (\forall X3. (X3 \in X2) \Rightarrow (v1\_finset\_1 X3)) \wedge (\forall X3. (m1\_subset\_1 \\ & X3 (k4\_partfun1 X0 X1)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (k4\_partfun1 \\ & X0 X1)) \Rightarrow (((X3 \in X2) \wedge ((X4 \in X2) \wedge (r1\_tarski X3 X4))) \Rightarrow (X3 = X4)))))) \\ & (\lambda X2 : \iota. X2) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (v1\_finset\_1 X0) \quad (8)$$

**Theorem 1**  $\forall X_0. \forall X_1. k1\_xboole\_0 \in k1\_substlat\ X_0\ X_1.$