

t11_armstrng (TM- RvZ3cJ6rwoSYV1HMYZZ2WRnbd5j1Hw2XM)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_armstrng : \iota \Rightarrow \iota$ be given. Let $r3_armstrng : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_relat_1 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 X0) \Rightarrow (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (((k1_xtuple_0 \\ & X1 = k1_xtuple_0 X2) \wedge (k2_xtuple_0 X1 = k2_xtuple_0 X2)) \Rightarrow (X1 = X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (X1 \in k4_armstrng X0) \Leftrightarrow (\exists X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 X0)) \wedge (\exists X3. (m1_subset_1 X3 (k1_zfmisc_1 \\ & X0)) \wedge (X1 = k4_tarski X2 X3))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \neg v1_xboole_0 (k4_armstrng X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X1 (k4_armstrng X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k4_armstrng X0)) \Rightarrow ((r3_armstrng X0 X1 X2) \Leftrightarrow ((r1_tarski \\ & (k1_xtuple_0 X1) (k1_xtuple_0 X2)) \wedge (r1_tarski (k2_xtuple_0 X2) \\ & (k2_xtuple_0 X1))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_relat_1 X0) \Leftrightarrow (\forall X1. \neg (X1 \in X0) \wedge (\forall X2. \\ & \forall X3. X1 \neq k4_tarski X2 X3)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (X0 = X1) \Leftrightarrow ((r1_tarski X0 X1) \wedge (r1_tarski X1 X0)) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 \ X1 \ (k4_armstrng \ X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 \ X2 \ (k4_armstrng \ X0)) \Rightarrow (((r3_armstrng \ X0 \ X2 \ X1) \wedge (r3_armstrng \\ & \quad X0 \ X1 \ X2)) \Rightarrow (X1 = X2))) \end{aligned}$$