

t43_armstrng (TMLMQmGsY- BqAxUP9AQwWKBnLqmVcd4C3jqz)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v6_armstrng : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ be given. Let $r5_armstrng : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_armstrng : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_armstrng : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_armstrng : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_finsub_1 : \iota \Rightarrow o$ be given. Let $r4_armstrng : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow (r5_armstrng \\ & X0 X1 (k9_armstrng X0 (k10_armstrng X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow (((v1_armstrng \\ & X1 X0) \wedge (v2_finsub_1 X1)) \Rightarrow ((X1 = k9_armstrng X0 (k10_armstrng X0 \\ & X1)) \wedge (\forall X2.((v6_armstrng X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k9_setfam_1 X0) (k9_setfam_1 X0)))))) \Rightarrow ((X1 = k9_armstrng \\ & X0 X2) \Rightarrow (r2_relset_1 (k9_setfam_1 X0) (k9_setfam_1 X0) X2 (k10_armstrng \\ & X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\ & ((v6_armstrng X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k9_setfam_1 X0) (k9_setfam_1 X0)))))) \Rightarrow ((v1_armstrng (k9_armstrng \\ & X0 X1) X0) \wedge (v2_finsub_1 (k9_armstrng X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k9_setfam_1 X0) (k9_setfam_1 X0)))) \Rightarrow (m1_subset_1 (k9_armstrng \\ & X0 X1) (k1_zfmisc_1 (k1_zfmisc_1 X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k9_setfam_1 X0) (k9_setfam_1 X0))) \Rightarrow (k9_armstrng X0 X1 = ReplSep \\
& (toset (\lambda X2 : \iota. m1_subset_1 X2 (k1_zfmisc_1 X0))) (\lambda X2 : \\
& \iota. \exists X3. (m1_subset_1 X3 (k1_zfmisc_1 X0)) \wedge (r4_armstrng \\
& X0 X1 X3 X2)) (\lambda X2 : \iota. X2))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\
& ((v6_armstrng X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k9_setfam_1 X0) (k9_setfam_1 X0)))) \Rightarrow (\exists X2. (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \wedge ((r5_armstrng X0 X2 (k9_armstrng \\
& X0 X1)) \wedge (r2_relset_1 (k9_setfam_1 X0) (k9_setfam_1 X0) X1 (k10_armstrng \\
& X0 X2))))))
\end{aligned}$$