

t46_mssubfam
(TMQu54SJm4rzktDoVexevEBhHhB7RBLiVqT)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m3_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_mboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_mssubfam : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_mssubfam : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\ & X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 \\ & X0))) \Rightarrow ((r1_tarski X1 X2) \Rightarrow (r1_tarski (k8_setfam_1 X0 X2) (k8_setfam_1 \\ & X0 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge (m3_pboole X2 \\ & X0 (k1_mboolean X0 X1))) \Rightarrow (k4_mssubfam X0 X1 X2 = k3_mssubfam X0 X1 \\ & X2) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. (m3_pboole \\ & X2 X0 X1) \Rightarrow ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge \\ & (v1_partfun1 X2 X0)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge (m3_pboole X2 \\ & X0 (k1_mboolean X0 X1))) \Rightarrow ((v1_relat_1 (k3_mssubfam X0 X1 X2)) \wedge \\ & ((v4_relat_1 (k3_mssubfam X0 X1 X2) X0) \wedge ((v1_funct_1 (k3_mssubfam \\ & X0 X1 X2)) \wedge (v1_partfun1 (k3_mssubfam X0 X1 X2) X0)))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow ((v1_relat_1 (k1_mboolean \\ & X0 X1)) \wedge ((v4_relat_1 (k1_mboolean X0 X1) X0) \wedge ((v1_funct_1 (k1_mboolean \\ & X0 X1)) \wedge (v1_partfun1 (k1_mboolean X0 X1) X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\ & ((r2_pboole X0 X1 X2) \Leftrightarrow (\forall X3. (X3 \in X0) \Rightarrow (r1_tarski (k1_funct_1 \\ & X1 X3) (k1_funct_1 X2 X3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. (m3_pboole \\ & X2 X0 (k1_mboolean X0 X1)) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v4_relat_1 \\ & X3 X0) \wedge ((v1_funct_1 X3) \wedge (v1_partfun1 X3 X0)))) \Rightarrow ((X3 = k3_mssubfam \\ & X0 X1 X2) \Leftrightarrow (\forall X4. \neg (X4 \in X0) \wedge (\forall X5. (m1_subset_1 X5 (k1_zfmisc_1 \\ & (k1_zfmisc_1 (k1_funct_1 X1 X4)))) \Rightarrow (\neg (X5 = k1_funct_1 X2 X4) \wedge \\ & k1_funct_1 X3 X4 = k8_setfam_1 (k1_funct_1 X1 X4) X5)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. (m3_pboole \\ & X2 X0 (k1_mboolean X0 X1)) \Rightarrow (\forall X3. (m3_pboole X3 X0 (k1_mboolean \\ & X0 X1)) \Rightarrow ((r2_pboole X0 X2 X3) \Rightarrow (r2_pboole X0 (k4_mssubfam X0 X1 X3) \\ & (k4_mssubfam X0 X1 X2)))))) \end{aligned}$$