

t12_mssubfam
(TMa1roGT6w7Umd2jkbAHgdp82bR2LW1XNW1)

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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 $v2_relat_1 : \iota \Rightarrow o$ be given. Let $m1_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow (X1 \in X0))) \wedge ((v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow (v1_xboole_0 X1))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge (v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow ((r1_pboole X0 X1 X2) \Leftrightarrow (\forall X3. (X3 \in X0) \Rightarrow (k1_funct_1 X1 X3 \in k1_funct_1 X2 X3))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge (v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow ((m1_pboole X2 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X0) \Rightarrow (m1_subset_1 (k1_funct_1 X2 X3) (k1_funct_1 X1 X3)))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow ((v2_relat_1 X1) \Leftrightarrow (\forall X2. \neg (X2 \in X0) \wedge (v1_xboole_0 (k1_funct_1 X1 X2)))) \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge (v2_relat_1 X2) \wedge (v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge \\ & v1_partfun1 X2 X0))) \Rightarrow ((m1_pboole X1 X0 X2) \Rightarrow (r1_pboole X0 X1 X2)) \end{aligned}$$