

t6_pre_circ
(TMc1BQbiBuu6eL3mNZGtN2SeskSK5p9dQ6J)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_card_3 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge \\ (v1_funct_1 X2)) \Rightarrow (((X0 \in k4_card_3 X1) \wedge (X2 \in k8_card_3 X1)) \Rightarrow (k1_funct_4 \\ X0 X2 \in k4_card_3 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \tag{2}$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge (v1_funct_1 X0))) \Rightarrow (\neg v1_xboole_0 (k4_card_3 X0)) \tag{3}$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (v4_funct_1 (k4_card_3 X0)) \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. (X1 = \\ k8_card_3 X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (\exists X3. ((v1_relat_1 \\ X3) \wedge (v1_funct_1 X3)) \wedge ((X2 = X3) \wedge ((r1_tarski (k9_xtuple_0 X3) \\ (k9_xtuple_0 X0)) \wedge (\forall X4. (X4 \in k9_xtuple_0 X3) \Rightarrow (k1_funct_1 \\ X3 X4 \in k1_funct_1 X0 X4))))))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow \\ & (X1 \in X0))) \wedge ((v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow (v1_xboole_0 \\ & X1))) \end{aligned} \tag{6}$$

Assume the following.

$$\forall X0. (v4_funct_1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 X0) \Rightarrow (v1_relat_1 X1) \wedge (v1_funct_1 X1)) \tag{7}$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))))) \Rightarrow (\forall X2. \\ & ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3. (m1_subset_1 \\ & X3 (k4_card_3 X1)) \Rightarrow (((r1_tarski (k9_xtuple_0 X2) (k9_xtuple_0 \\ & X1)) \wedge (\forall X4. (X4 \in k9_xtuple_0 X2) \Rightarrow (k1_funct_1 X2 X4 \in k1_funct_1 \\ & X1 X4))) \Rightarrow (m1_subset_1 (k1_funct_4 X3 X2) (k4_card_3 X1)))))) \end{aligned}$$