

t3_topreala
(TMLbuvwXwtNrG818YXdAHy74t3JS1FgyHjz)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k4_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X0 \in k4_card_3 X1) \Leftrightarrow ((k9_xtuple_0 X0 = k9_xtuple_0 X1) \wedge (\forall X2.(X2 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 X0 X2 \in k1_funct_1 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((X0 \neq X1) \Rightarrow (k1_funct_1 (k4_funct_4 X0 X1 X2 X3) X0 = X2)) \wedge (k1_funct_1 (k4_funct_4 X0 X1 X2 X3) X1 = X3) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (k9_xtuple_0 (k4_funct_4 X0 X1 X2 X3) = k2_tarski X0 X1) \wedge (r1_tarski (k10_xtuple_0 (k4_funct_4 X0 X1 X2 X3)) (k2_tarski X2 X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (v1_relat_1 (k4_funct_4 X0 X1 X2 X3)) \wedge (v1_funct_1 (k4_funct_4 X0 X1 X2 X3)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X2 = k2_tarski X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \end{aligned} \quad (5)$$

Theorem 1

$$\forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow ((X4 \in k4_card_3 (k4_funct_4 X0 X1 X2 X3)) \Rightarrow ((X0 = X1) \vee ((k1_funct_1 X4 X0 \in X2) \wedge (k1_funct_1 X4 X1 \in X3))))$$