

t84_card_2

(TMc72gcUADB1YkRT9dBcHmgqCg5wBvc75XG)

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Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_card_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_card_1 X0) \Rightarrow (\forall X1.(v1_card_1 X1) \Rightarrow (\forall X2. \\ & (v1_card_1 X2) \Rightarrow (\forall X3.(v1_card_1 X3) \Rightarrow ((\neg(\neg(X0 \in X1) \wedge (X2 \in \\ & X3)) \wedge (\neg(r1_ordinal1 X0 X1) \wedge (X2 \in X3)) \wedge ((\neg(X0 \in X1) \wedge (r1_ordinal1 \\ & X2 X3)) \wedge (\neg(r1_ordinal1 X0 X1) \wedge (r1_ordinal1 X2 X3)))))) \Rightarrow ((r1_ordinal1 \\ & (k1_card_2 X0 X2) (k1_card_2 X1 X3)) \wedge (r1_ordinal1 (k1_card_2 X2 \\ & X0) (k1_card_2 X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v1_card_1 X0) \Rightarrow (\forall X1.(v1_card_1 X1) \Rightarrow ((X0 \in X1) \Leftrightarrow (\neg r1_ordinal1 X1 X0))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1_card_1 X0) \wedge (v1_card_1 X1)) \Rightarrow (k1_card_2 X0 X1 = k1_card_2 X1 X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (\neg X1 \in X0) \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_card_1 X0) \Rightarrow (\forall X1.(v1_card_1 X1) \Rightarrow (\forall X2. \\ & (v1_card_1 X2) \Rightarrow (((X0 \in X1) \vee (r1_ordinal1 X0 X1)) \Rightarrow ((r1_ordinal1 \\ & (k1_card_2 X2 X0) (k1_card_2 X2 X1)) \wedge ((r1_ordinal1 (k1_card_2 \\ & X2 X0) (k1_card_2 X1 X2)) \wedge ((r1_ordinal1 (k1_card_2 X0 X2) (k1_card_2 \\ & X2 X1)) \wedge (r1_ordinal1 (k1_card_2 X0 X2) (k1_card_2 X1 X2)))))))) \end{aligned}$$