

t9_waybel_5 (TMQPpXomHvJ- DRg1yjYNrcby98dZiWzmrhdd)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funcop_1 : \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k2_funct_6 : \iota \Rightarrow \iota$ be given. Let $k2_pralg_2 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k7_funct_6 : \iota \Rightarrow \iota$ be given. Let $k3_funct_6 : \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_funcop_1 X0))) \Rightarrow \\ & (\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X1 \in k1_relset_1 \\ & (k4_card_3 (k2_funct_6 X0)) (k2_pralg_2 X0)) \Rightarrow ((k9_xtuple_0 X1 = \\ & k9_xtuple_0 X0) \wedge (k9_xtuple_0 X0 = k9_xtuple_0 (k1_funct_1 (k2_pralg_2 \\ & X0) X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_funcop_1 X0))) \Rightarrow \\ & (\forall X1.(X1 \in k1_relset_1 (k4_card_3 (k2_funct_6 X0)) (k2_pralg_2 \\ & X0)) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X0 \in \\ & k9_xtuple_0 X1) \Rightarrow (k1_funct_1 X1 X0 \in k10_xtuple_0 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. \\ & ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3.((v1_relat_1 \\ & X3) \wedge (v1_funct_1 X3)) \Rightarrow (\forall X4.((v1_relat_1 X4) \wedge (v1_funct_1 \\ & X4)) \Rightarrow (((X0 \in k9_xtuple_0 X1) \wedge ((X2 = k1_funct_1 X1 X0) \wedge ((X3 \in k4_card_3 \\ & (k2_funct_6 X1)) \wedge (X4 = k1_funct_1 (k7_funct_6 X1) X3)))) \Rightarrow ((k1_funct_1 \\ & X3 X0 \in k9_xtuple_0 X2) \wedge ((k1_funct_1 X4 X0 = k1_funct_1 X2 (k1_funct_1 \\ & X3 X0)) \wedge (X4 \in k4_card_3 (k3_funct_6 X1))))))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_funcop_1 X0))) \Rightarrow (k2_pralg_2 X0 = k7_funct_6 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_funcop_1 X0))) \Rightarrow ((v1_relat_1 (k1_funct_1 X0 X1)) \wedge (v1_funct_1 (k1_funct_1 X0 X1))) \quad (7)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v1_relat_1 (k7_funct_6 X0)) \wedge (v1_funct_1 (k7_funct_6 X0))) \quad (8)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_funcop_1 X0))) \Rightarrow ((v1_relat_1 (k2_pralg_2 X0)) \wedge ((v4_relat_1 (k2_pralg_2 X0) (k4_card_3 (k2_funct_6 X0))) \wedge ((v1_funct_1 (k2_pralg_2 X0)) \wedge (v1_partfun1 (k2_pralg_2 X0) (k4_card_3 (k2_funct_6 X0)))) \wedge (v1_funcop_1 (k2_pralg_2 X0)))))) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (v1_partfun1 X1 X0) \Leftrightarrow (k1_relset_1 X0 X1 = X0) \quad (10)$$

Theorem 1

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_funcop_1 X0))) \Rightarrow ((\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X1 \in k1_relset_1 (k4_card_3 (k2_funct_6 X0)) (k2_pralg_2 X0)) \Rightarrow (\forall X2. (X2 \in k9_xtuple_0 X0) \Rightarrow ((k1_funct_1 X1 X2 \in k9_xtuple_0 (k1_funct_1 X0 X2)) \wedge ((k1_funct_1 (k1_funct_1 (k2_pralg_2 X0) X1) X2 = k1_funct_1 (k1_funct_1 X0 X2) (k1_funct_1 X1 X2)) \wedge (k1_funct_1 (k1_funct_1 X0 X2) (k1_funct_1 X1 X2) \in k10_xtuple_0 (k1_funct_1 (k2_pralg_2 X0) X1))))))))))$$