

t29_funcop_1

(TMVJVfK96iHNVEgsCCeaEkBD2GJpnBsN64Q)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_funct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (k13_funct_3 (k3_relat_1 X2 X0) (k3_relat_1 X2 X1) = k3_relat_1 X2 (k13_funct_3 X0 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (\forall X2.(v1_relat_1 X2) \Rightarrow (k3_relat_1 (k3_relat_1 X0 X1) X2 = k3_relat_1 X0 (k3_relat_1 X1 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. k3_relat_1 X0 (k2_funcop_1 X1 X2) = k2_funcop_1 (k8_relat_1 X0 X1) X2) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (k9_xtuple_0 (k3_relat_1 X0 X1) = k8_relat_1 X0 (k9_xtuple_0 X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.(((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 X1)) \wedge (v1_funct_1 (k3_relat_1 X0 X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.(v1_relat_1 (k2_funcop_1 X0 X1)) \wedge (v1_funct_1 (k2_funcop_1 X0 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k3_relat_1 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0)\wedge(v1_funct_1 X0))\wedge((v1_relat_1 X1)\wedge(v1_funct_1 X1)))\Rightarrow((v1_relat_1 (k13_funct_3 X0 X1))\wedge(v1_funct_1 (k13_funct_3 X0 X1))) \quad (8)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(\forall X2.k4_funcop_1 X0 X1 X2 = k3_relat_1 (k13_funct_3 X1 (k2_funcop_1 (k9_xtuple_0 X1) X2) X0))) \quad (9)$$

Theorem 1

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(\forall X2.((v1_relat_1 X2)\wedge(v1_funct_1 X2))\Rightarrow(\forall X3.k3_relat_1 X1 (k4_funcop_1 X2 X0 X3) = k4_funcop_1 X2 (k3_relat_1 X1 X0) X3))))$$