

t117_funct_7
(TMXtEt72f8oExqYUjDh7rr4uH1jMSD15Pac)

October 27, 2020

Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k6_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge \\ (v1_funct_1 X2)) \Rightarrow ((r1_tarski (k10_xtuple_0 X2) (k9_xtuple_0 \\ X0)) \Rightarrow (k3_relat_1 (k1_funct_4 X1 X2) X0 = k1_funct_4 (k3_relat_1 \\ X1 X0) (k3_relat_1 X2 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. r1_tarski X0 (k2_xboole_0 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ k9_xtuple_0 (k2_funct_7 X0 X2 X1) = k9_xtuple_0 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (r1_tarski (k10_xtuple_0 (k1_funct_4 \\ X0 X1)) (k2_xboole_0 (k10_xtuple_0 X0) (k10_xtuple_0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. \\ \forall X3. (r1_tarski (k10_xtuple_0 X1) X0) \Rightarrow (k6_funct_4 X1 X2 \\ X3 = k3_relat_1 X1 (k2_funct_7 (k6_partfun1 X0) X2 X3))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. k6_partfun1 X0 = k4_relat_1 X0 \quad (6)$$

Assume the following.

$$\forall X0.k9_xtuple_0 (k4_relat_1 X0) = X0 \quad (7)$$

Assume the following.

$$\forall X0.(v1_relat_1 (k4_relat_1 X0)) \wedge (v1_funct_1 (k4_relat_1 X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_relat_1 X0) \wedge (v1_funct_1 \\ X0)) \Rightarrow ((v1_relat_1 (k2_funct_7 X0 X1 X2)) \wedge (v1_funct_1 (k2_funct_7 \\ X0 X1 X2))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k1_funct_4 X0 \\ X1)) \wedge (v1_funct_1 (k1_funct_4 X0 X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (11)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.\forall X3.k6_funct_4 \\ (k1_funct_4 X0 X1) X2 X3 = k1_funct_4 (k6_funct_4 X0 X2 X3) (k6_funct_4 \\ X1 X2 X3))) \end{aligned}$$