

t3_altpat_1

(TMYPd4TiWP8sohppdFX1irCRosmfxbdNn3m)

October 27, 2020

Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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. Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow ((r1_tarski (k10_xtuple_0 X0) (k9_xtuple_0 X1)) \Rightarrow (k9_xtuple_0 (k3_relat_1 X0 X1) = k9_xtuple_0 X0))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (r1_tarski (k10_xtuple_0 (k3_relat_1 X0 X1)) (k10_xtuple_0 X1))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 X1)) \wedge (v1_funct_1 (k3_relat_1 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k3_relat_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k1_funct_2 X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow (\exists X4.((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \wedge ((X3 = X4) \wedge ((k9_xtuple_0 X4 = X0) \wedge (r1_tarski (k10_xtuple_0 X4) X1)))))) \quad (6)$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow (\forall X4.((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow (((X3 \in k1_funct_2 X0 X1) \wedge (X4 \in k1_funct_2 X1 X2)) \Rightarrow (k3_relat_1 X3 X4 \in k1_funct_2 X0 X2)))$$