

t12_funct_4
(TMZTcCiZxLHLfp2mEhWtf9BENJTsudqn152)

October 27, 2020

Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k1_funct_4 X0 X1)) \wedge (v1_funct_1 (k1_funct_4 X0 X1))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X2 = k2_xboole_0 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((X2 = k1_funct_4 X0 X1) \Leftrightarrow ((k9_xtuple_0 X2 = k2_xboole_0 (k9_xtuple_0 X0) (k9_xtuple_0 X1)) \wedge (\forall X3. (X3 \in k2_xboole_0 (k9_xtuple_0 X0) (k9_xtuple_0 X1)) \Rightarrow (((X3 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 X2 X3 = k1_funct_1 X1 X3)) \wedge ((\neg X3 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 X2 X3 = k1_funct_1 X0 X3)))))))))) \quad (3) \end{aligned}$$

Theorem 1

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((X0 \in k9_xtuple_0 (k1_funct_4 X1 X2)) \Leftrightarrow ((X0 \in k9_xtuple_0 X1) \vee (X0 \in k9_xtuple_0 X2))))$$