

t13_ens_1

(TMZHqT Jr7wC89Ku7fwVxG9KVM287bcZFHkx)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_ens_1 : \iota \Rightarrow \iota$ be given. Let $k3_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k2_ens_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k2_ens_1 X0)) \Rightarrow ((k3_ens_1 X0 \\ & X1 = k4_ens_1 X0 X2) \Rightarrow ((k2_xtuple_0 (k6_ens_1 X0 X2 X1) = k3_relat_1 \\ & (k2_xtuple_0 X2) (k2_xtuple_0 X1)) \wedge ((k3_ens_1 X0 (k6_ens_1 X0 \\ & X2 X1) = k3_ens_1 X0 X2) \wedge (k4_ens_1 X0 (k6_ens_1 X0 X2 X1) = k4_ens_1 \\ & X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k2_ens_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k2_ens_1 X0)) \Rightarrow (((k2_xtuple_0 \\ & X1 = k2_xtuple_0 X2) \wedge ((k3_ens_1 X0 X1 = k3_ens_1 X0 X2) \wedge (k4_ens_1 \\ & X0 X1 = k4_ens_1 X0 X2))) \Rightarrow (X1 = X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 (k2_ens_1 \\ & X0))) \Rightarrow ((v1_relat_1 (k2_xtuple_0 X1)) \wedge (v1_funct_1 (k2_xtuple_0 \\ & X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 \\ X1 (k2_ens_1 X0))\wedge(m1_subset_1 X2 (k2_ens_1 X0))))\Rightarrow(m1_subset_1 \\ (k6_ens_1 X0 X1 X2) (k2_ens_1 X0)) \end{aligned} \quad (5)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k2_ens_1 \\ X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (k2_ens_1 X0))\Rightarrow(\forall X3. \\ (m1_subset_1 X3 (k2_ens_1 X0))\Rightarrow(((k3_ens_1 X0 X1 = k4_ens_1 X0 X2)\wedge \\ (k3_ens_1 X0 X3 = k4_ens_1 X0 X1))\Rightarrow(k6_ens_1 X0 (k6_ens_1 X0 X2 X1) \\ X3 = k6_ens_1 X0 X2 (k6_ens_1 X0 X1 X3)))))) \end{aligned}$$