

t49_xboolean
(TMJJXJDzn5GTJ8csrVoyXXJVWzwZEPndLYP)

October 27, 2020

Let $v1_xboolean : \iota \Rightarrow o$ be given. Let $k9_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboolean : \iota \Rightarrow \iota$ be given. Let $k4_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (\forall X2. \\ & (v1_xboolean X2) \Rightarrow (k5_xboolean X0 (k7_xboolean X1 X2) = k4_xboolean \\ & (k5_xboolean (k5_xboolean X0 (k3_xboolean X1)) X2) (k5_xboolean \\ & (k5_xboolean X0 (k3_xboolean X2)) X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboolean X0) \wedge (v1_xboolean X1)) \Rightarrow (v1_xboolean (k7_xboolean X0 X1)) \tag{2}$$

Assume the following.

$$\forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k9_xboolean X0 X1 = k3_xboolean (k5_xboolean X0 X1))) \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (\forall X2. \\ & (v1_xboolean X2) \Rightarrow (k9_xboolean X0 (k7_xboolean X1 X2) = k3_xboolean \\ & (k4_xboolean (k5_xboolean (k5_xboolean X0 (k3_xboolean X1)) X2) \\ & (k5_xboolean (k5_xboolean X0 (k3_xboolean X2)) X1)))) \end{aligned}$$