

t144\_xboolean  
(TMLpG1Bqi6zweV2v46zpaLwt5qnciGyFggo)

October 27, 2020

Let  $v1\_xboolean : \iota \Rightarrow o$  be given. Let  $k4\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboolean : \iota$  be given. Let  $k3\_xboolean : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2. \\ & (v1\_xboolean X2) \Rightarrow (k4\_xboolean X0 (k9\_xboolean X1 X2) = k4\_xboolean \\ & (k4\_xboolean X0 (k3\_xboolean X1)) (k3\_xboolean X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k9\_xboolean X0 (k4\_xboolean X0 X1) = k3\_xboolean X0)) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (k4\_xboolean X0 (k3\_xboolean X0) = k1\_xboolean) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (k4\_xboolean X0 X0 = X0) \quad (4)$$

**Theorem 1**

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k4\_xboolean X0 (k9\_xboolean X0 X1) = k1\_xboolean))$$