

t62\_xboolean  
(TMQ46fmta3QSyTmTvcHEF4iCWdm5cJEKGWZ)

October 27, 2020

Let  $v1\_xboolean : \iota \Rightarrow o$  be given. Let  $k8\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboolean : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2. \\ & (v1\_xboolean X2) \Rightarrow (k8\_xboolean X0 (k6\_xboolean X1 X2) = k4\_xboolean \\ & (k6\_xboolean X0 X1) (k6\_xboolean X0 (k3\_xboolean X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2. \\ & (v1\_xboolean X2) \Rightarrow (k8\_xboolean X0 (k8\_xboolean X1 X2) = k4\_xboolean \\ & (k6\_xboolean X0 X1) (k6\_xboolean X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2. \\ & (v1\_xboolean X2) \Rightarrow (k8\_xboolean X0 (k8\_xboolean X1 X2) = k4\_xboolean \\ & (k5\_xboolean (k3\_xboolean X0) X1) (k5\_xboolean (k3\_xboolean X0) \\ & X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (v1\_xboolean (k3\_xboolean X0)) \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2. \\ & (v1\_xboolean X2) \Rightarrow (k8\_xboolean X0 (k6\_xboolean X1 X2) = k4\_xboolean \\ & (k5\_xboolean (k3\_xboolean X0) X1) (k5\_xboolean (k3\_xboolean X0) \\ & (k3\_xboolean X2)))))) \end{aligned}$$