

t76\_xboolean (TM-  
cUGX1wEvDXeyVWCj9PhGTn6hjLLPsp4bX)

October 27, 2020

Let  $v1\_xboolean : \iota \Rightarrow o$  be given. Let  $k4\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboolean : \iota \Rightarrow \iota$  be given. Let  $k8\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k8\_xboolean X0 (k7\_xboolean X0 X1) = k3\_xboolean (k4\_xboolean X0 X1))) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k4\_xboolean X0 (k8\_xboolean X0 X1) = k4\_xboolean X0 (k3\_xboolean X1))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (v1\_xboolean (k7\_xboolean X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k8\_xboolean X0 X1 = k3\_xboolean (k4\_xboolean X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k10\_xboolean X0 X1 = k3\_xboolean (k7\_xboolean X0 X1))) \quad (5)$$

**Theorem 1**

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k4\_xboolean X0 (k10\_xboolean X0 X1) = k4\_xboolean X0 (k3\_xboolean X1)))$$