

t117\_xboolean  
(TMGDz1mjoXnR7bWngxfU6AAeyRDihrq8KFe)

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Let  $v1\_xboolean : \iota \Rightarrow o$  be given. Let  $k6\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboolean : \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (( \\ (k6\_xboolean X0 X1 = k2\_xboolean) \wedge (k6\_xboolean X1 X0 = k2\_xboolean)) \Rightarrow \\ (X0 = X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2. \\ (v1\_xboolean X2) \Rightarrow ((k6\_xboolean X0 X1 = k2\_xboolean) \Rightarrow (k6\_xboolean \\ (k6\_xboolean X1 X2) (k6\_xboolean X0 X2) = k2\_xboolean)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k6\_xboolean \\ X0 (k6\_xboolean X1 X0) = k2\_xboolean)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow ( \\ v1\_xboolean (k6\_xboolean X0 X1)) \tag{4}$$

Assume the following.

$$v1\_xboolean k2\_xboolean \tag{5}$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2. \\ (v1\_xboolean X2) \Rightarrow (((k6\_xboolean X0 X1 = k2\_xboolean) \wedge (k6\_xboolean \\ X1 X2 = k2\_xboolean)) \Rightarrow (k6\_xboolean X0 X2 = k2\_xboolean)))) \end{aligned}$$