

# t111\_xboolean (TMR- PHRsjV7Np3TrVRSHTJZRfJ6Gxujb63Ld)

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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. Let  $k4\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboolean : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k4\_xboolean X0 (k6\_xboolean X0 X1) = k4\_xboolean X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2.(v1\_xboolean X2) \Rightarrow (k6\_xboolean (k6\_xboolean X0 X1) (k6\_xboolean (k6\_xboolean X1 X2) (k6\_xboolean X0 X2)) = k2\_xboolean))) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k6\_xboolean X0 (k6\_xboolean X1 X0) = k2\_xboolean)) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow ((k4\_xboolean X0 X1 = k2\_xboolean) \Rightarrow ((X0 = k2\_xboolean) \wedge (X1 = k2\_xboolean)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (k4\_xboolean X0 X0 = X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (v1\_xboolean (k6\_xboolean X0 X1)) \quad (6)$$

Assume the following.

$$v1\_xboolean k2\_xboolean \quad (7)$$

Assume the following.

$$v1\_xboolean \ k1\_xboolean \tag{8}$$

Assume the following.

$$\forall X0.(v1\_xboolean \ X0) \Leftrightarrow ((X0 = k1\_xboolean) \vee (X0 = k2\_xboolean)) \tag{9}$$

Assume the following.

$$k2\_xboolean = np\_1 \tag{10}$$

Assume the following.

$$k1\_xboolean = k6\_numbers \tag{11}$$

**Theorem 1**

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