

# t122\_xboolean (TMPLqFr- PDwZKYeKmb6BKWVU25LxXh6rEPHT)

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

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k4\_xboolean X0 (k5\_xboolean X0 X1) = X0)) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k5\_xboolean X0 (k4\_xboolean (k3\_xboolean X0) X1) = k5\_xboolean X0 X1)) \quad (2)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (v1\_xboolean (k6\_xboolean X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (v1\_xboolean (k3\_xboolean X0)) \quad (5)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k6\_xboolean X0 X1 = k5\_xboolean (k3\_xboolean X0) X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (k5\_xboolean X0 X1 = k5\_xboolean X1 X0) \quad (7)$$

## Theorem 1

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k5\_xboolean X0 (k6\_xboolean X0 X1) = k2\_xboolean))$$