

## t2\_ltlaxio1

(TMT4yYPLUbgA5NBHkY97Wqvn616Sj4Rh5iN)

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Let  $v1\_xboolean : \iota \Rightarrow o$  be given. Let  $k6\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k8\_margrel1 : \iota$  be given. Let  $k2\_xboolean : \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $k3\_xboolean : \iota \Rightarrow \iota$  be given. Let  $k1\_xboolean : \iota$  be given. Assume the following.

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

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k6\_xboolean X0 (k4\_xboolean X0 X1) = k6\_xboolean X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (k4\_xboolean k8\_margrel1 X0 = X0) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow ((k6\_xboolean X0 X1 = k2\_xboolean) \wedge (k6\_xboolean X1 X0 = k2\_xboolean)) \Rightarrow (X0 = X1)) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (k6\_xboolean (k6\_xboolean k2\_xboolean X0) X0 = k2\_xboolean) \quad (5)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (k6\_xboolean X0 (k6\_xboolean X1 X0) = k2\_xboolean)) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (k6\_xboolean X0 X0 = k2\_xboolean) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow ((k4\_xboolean X0 X1 = k2\_xboolean) \Rightarrow ((X0 = k2\_xboolean) \wedge (X1 = k2\_xboolean)))) \quad (8)$$

Assume the following.

$$k6\_xcmplx\_0 \ np\_1 \ np\_1 = np\_0 \quad (9)$$

Assume the following.

$$k8\_margrel1 = k2\_xboolean \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (v1\_xboolean (k6\_xboolean X0 X1)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (v1\_xboolean (k4\_xboolean X0 X1)) \quad (12)$$

Assume the following.

$$v1\_xboolean \ k2\_xboolean \quad (13)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (v1\_xboolean (k3\_xboolean X0)) \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Rightarrow (k3\_xboolean X0 = k6\_xcmplx\_0 \ np\_1 \ X0) \quad (15)$$

Assume the following.

$$\forall X0.(v1\_xboolean X0) \Leftrightarrow ((X0 = k1\_xboolean) \vee (X0 = k2\_xboolean)) \quad (16)$$

Assume the following.

$$k2\_xboolean = np\_1 \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean X0) \wedge (v1\_xboolean X1)) \Rightarrow (k4\_xboolean X0 X1 = k4\_xboolean X1 X0) \quad (18)$$

**Theorem 1**

$$\forall X0.(v1\_xboolean X0) \Rightarrow (\forall X1.(v1\_xboolean X1) \Rightarrow (\forall X2.(v1\_xboolean X2) \Rightarrow (k6\_xboolean (k6\_xboolean X0 (k6\_xboolean X1 X2)) (k6\_xboolean (k4\_xboolean X0 X1) X2) = np\_1)))$$