

t50_xboolean (TMM- fcJSJ4C77cLU8aHBmyCkuRQMz9Q3MThH)

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Let $v1_xboolean : \iota \Rightarrow o$ be given. Let $k7_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (\forall X2. \\ & (v1_xboolean X2) \Rightarrow (k5_xboolean X0 (k9_xboolean X1 X2) = k4_xboolean \\ & (k6_xboolean X1 X0) (k6_xboolean X2 X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k6_xboolean \\ & X0 (k4_xboolean X0 X1) = k6_xboolean X0 X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_xboolean X0) \wedge (v1_xboolean X1)) \Rightarrow (\\ & v1_xboolean (k4_xboolean X0 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k7_xboolean \\ & X0 X1 = k4_xboolean (k6_xboolean X0 X1) (k6_xboolean X1 X0))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_xboolean X0) \wedge (v1_xboolean X1)) \Rightarrow (\\ & k4_xboolean X0 X1 = k4_xboolean X1 X0) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xboolean X0) \Rightarrow (\forall X1.(v1_xboolean X1) \Rightarrow (k7_xboolean \\ & X0 X1 = k5_xboolean (k4_xboolean X0 X1) (k9_xboolean X0 X1))) \end{aligned}$$