t38_xboolean (TMKrydKNGePpgEdSeXz-DaamxKDJLHN8gDcH)

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Let $v1\_xboolean : \iota{\Rightarrow}o$ be given. Let $k5\_xboolean : \iota{\Rightarrow}\iota{\Rightarrow}\iota$ be given. Let $k9\_xboolean : \iota{\Rightarrow}\iota{\Rightarrow}\iota$ be given. Let $k4\_xboolean : \iota{\Rightarrow}\iota{\Rightarrow}\iota$ be given. Let $k3\_xboolean : \iota{\Rightarrow}\iota$ be given. Assume the following.

$$\forall X0.(v1\_xboolean\ X0){\Rightarrow}(\forall X1.(v1\_xboolean\ X1){\Rightarrow}(\forall X2. \\ (v1\_xboolean\ X2){\Rightarrow}(k5\_xboolean\ X0\ (k4\_xboolean\ X1\ X2) = k4\_xboolean \\ (k5\_xboolean\ X0\ X1)\ (k5\_xboolean\ X0\ X2)))) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0){\Rightarrow}(\forall X1.(v1\_xboolean\ X1){\Rightarrow}(k9\_xboolean \\ X0\ (k5\_xboolean\ X0\ X1) = k9\_xboolean\ X0\ X1)) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0){\Rightarrow}(\forall X1.(v1\_xboolean\ X1){\Rightarrow}(k9\_xboolean \\ X0\ (k5\_xboolean\ X0\ X1) = k4\_xboolean\ (k3\_xboolean\ X0)\ (k3\_xboolean \\ X1))) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0){\Rightarrow}(v1\_xboolean\ (k3\_xboolean\ X0)) \tag{4}$$

Theorem 1

$$\forall X0.(v1\_xboolean\ X0){\Rightarrow}(\forall X1.(v1\_xboolean\ X1){\Rightarrow}(\forall X2. \\ (v1\_xboolean\ X2){\Rightarrow}(k5\_xboolean\ X0\ (k9\_xboolean\ X1\ X2) = k4\_xboolean \\ (k5\_xboolean\ X0\ (k3\_xboolean\ X1))\ (k5\_xboolean\ X0\ (k3\_xboolean \\ X2)))))$$