t21_gate_1 (TMagZuUmLZdJHTaagLGgE7ioL3jNYMgir4v)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k15\_gate\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k1\_gate\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (\neg v1\_xboole\_0\ (k1\_gate\_1\ X0)) \tag{2}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.\forall X2.\forall X3.((\neg(v1\_xboole\_0\\ X0) \wedge ((v1\_xboole\_0\ X1) \wedge ((v1\_xboole\_0\ X2) \wedge (v1\_xboole\_0\ X3)))) \Rightarrow\\ (k15\_gate\_1\ X0\ X1\ X2\ X3 = k1\_gate\_1\ k1\_xboole\_0)) \wedge (\neg(v1\_xboole\_0\\ X0) \wedge ((v1\_xboole\_0\ X1) \wedge ((v1\_xboole\_0\ X2) \wedge ((v1\_xboole\_0\ X3) \wedge\\ (k15\_gate\_1\ X0\ X1\ X2\ X3 \neq k1\_xboole\_0)))))\end{gathered} \tag{3}$$

Theorem 1

$$\begin{gathered}\forall X0.\forall X1.\forall X2.\forall X3.(\neg(\neg v1\_xboole\_0\\ (k15\_gate\_1\ X0\ X1\ X2\ X3)) \wedge ((v1\_xboole\_0\ X0) \wedge ((v1\_xboole\_0\ X1) \wedge\\ ((v1\_xboole\_0\ X2) \wedge (v1\_xboole\_0\ X3))))) \wedge (\neg(\neg(v1\_xboole\_0\ X0) \wedge\\ ((v1\_xboole\_0\ X1) \wedge ((v1\_xboole\_0\ X2) \wedge (v1\_xboole\_0\ X3)))) \wedge (v1\_xboole\_0\\ (k15\_gate\_1\ X0\ X1\ X2\ X3)))\end{gathered}$$