

t29_gate_1 (TMPdLrTVn- WmhdzP9xNhdbnEqMCsVEuZSrfX)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k23_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg(v1_xboole_0 \ X0) \wedge ((v1_xboole_0 \ X1) \wedge ((v1_xboole_0 \ X2) \wedge ((v1_xboole_0 \ X3) \wedge ((v1_xboole_0 \ X4) \wedge (v1_xboole_0 \ X5)))))) \Rightarrow (k23_gate_1 \ X0 \ X1 \ X2 \ X3 \ X4 \ X5 = k1_gate_1 \ k1_xboole_0)) \wedge (\neg(v1_xboole_0 \ X0) \wedge ((v1_xboole_0 \ X1) \wedge ((v1_xboole_0 \ X2) \wedge ((v1_xboole_0 \ X3) \wedge ((v1_xboole_0 \ X4) \wedge ((v1_xboole_0 \ X5) \wedge (k23_gate_1 \ X0 \ X1 \ X2 \ X3 \ X4 \ X5 \neq k1_xboole_0)))))))))) \tag{3} \end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (\neg(\neg v1_xboole_0 \ (k23_gate_1 \ X0 \ X1 \ X2 \ X3 \ X4 \ X5)) \wedge ((v1_xboole_0 \ X0) \wedge ((v1_xboole_0 \ X1) \wedge ((v1_xboole_0 \ X2) \wedge ((v1_xboole_0 \ X3) \wedge ((v1_xboole_0 \ X4) \wedge (v1_xboole_0 \ X5))))))) \wedge (\neg(\neg(v1_xboole_0 \ X0) \wedge ((v1_xboole_0 \ X1) \wedge ((v1_xboole_0 \ X2) \wedge ((v1_xboole_0 \ X3) \wedge ((v1_xboole_0 \ X4) \wedge (v1_xboole_0 \ X5))))))) \wedge (v1_xboole_0 \ (k23_gate_1 \ X0 \ X1 \ X2 \ X3 \ X4 \ X5))) \end{aligned}$$