

t35_gate_1 (TMTioZSS- cbUbrykGJ3fVd6K3AsVWXXMRsvd)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k29_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k21_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_gate_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (\neg v1_xboole_0 \\ & (k21_gate_1 X0 X1 X2 X3 X4)) \Leftrightarrow ((v1_xboole_0 X0) \wedge ((v1_xboole_0 X1) \wedge \\ & ((v1_xboole_0 X2) \wedge ((v1_xboole_0 X3) \wedge (v1_xboole_0 X4)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & \forall X6. (\neg (v1_xboole_0 X0) \wedge ((v1_xboole_0 X1) \wedge ((v1_xboole_0 X2) \wedge ((v1_xboole_0 X3) \wedge ((v1_xboole_0 X4) \wedge ((v1_xboole_0 X5) \wedge \\ & ((v1_xboole_0 X6) \wedge (k29_gate_1 X0 X1 X2 X3 X4 X5 X6 \neq k1_gate_1 k1_xboole_0)))))))))) \wedge \\ & ((\neg (v1_xboole_0 X0) \wedge ((v1_xboole_0 X1) \wedge ((v1_xboole_0 X2) \wedge ((v1_xboole_0 X3) \wedge ((v1_xboole_0 X4) \wedge ((v1_xboole_0 X5) \wedge (v1_xboole_0 X6)))))))))) \Rightarrow (k29_gate_1 X0 X1 X2 X3 X4 X5 X6 = k1_xboole_0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (\neg (v1_xboole_0 \\ & X0) \wedge ((v1_xboole_0 X1) \wedge ((v1_xboole_0 X2) \wedge ((v1_xboole_0 X3) \wedge \\ & ((v1_xboole_0 X4) \wedge (k21_gate_1 X0 X1 X2 X3 X4 \neq k1_gate_1 k1_xboole_0)))))) \wedge \\ & ((\neg (v1_xboole_0 X0) \wedge ((v1_xboole_0 X1) \wedge ((v1_xboole_0 X2) \wedge ((v1_xboole_0 X3) \wedge (v1_xboole_0 X4)))))) \Rightarrow (k21_gate_1 X0 X1 X2 X3 X4 = k1_xboole_0)) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & \forall X6. (\neg v1_xboole_0 (k29_gate_1 X0 X1 X2 X3 X4 X5 X6)) \Leftrightarrow ((v1_xboole_0 X0) \wedge ((v1_xboole_0 X1) \wedge ((v1_xboole_0 X2) \wedge ((v1_xboole_0 X3) \wedge \\ & ((v1_xboole_0 X4) \wedge ((v1_xboole_0 X5) \wedge (v1_xboole_0 X6)))))))) \end{aligned}$$