

t23_gate_1
(TMFv9q8f1j99baoJD2A5RTwf3ZGku16ohnT)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k17_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(\neg(v1_xboole_0 \ X0) \wedge \\ & ((v1_xboole_0 \ X1) \wedge ((v1_xboole_0 \ X2) \wedge ((v1_xboole_0 \ X3) \wedge (k17_gate_1 \\ & \quad X0 \ X1 \ X2 \ X3 \neq k1_gate_1 \ k1_xboole_0)))))) \wedge ((\neg(v1_xboole_0 \ X0) \wedge \\ & (v1_xboole_0 \ X1) \wedge ((v1_xboole_0 \ X2) \wedge (v1_xboole_0 \ X3)))) \Rightarrow (k17_gate_1 \\ & \quad X0 \ X1 \ X2 \ X3 = k1_xboole_0)) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(\neg v1_xboole_0 \ (k17_gate_1 \\ & \quad X0 \ X1 \ X2 \ X3)) \Leftrightarrow ((v1_xboole_0 \ X0) \wedge ((v1_xboole_0 \ X1) \wedge ((v1_xboole_0 \\ & \quad \quad X2) \wedge (v1_xboole_0 \ X3)))) \end{aligned}$$