

t42_gate_1
(TMTEK7tKTa46G4Qc1zZfo8Eg73J13QD9N42)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k7_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k34_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_gate_1 : \iota \Rightarrow \iota$ be given. Let $k4_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k21_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k35_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k37_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k39_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k40_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k38_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k36_gate_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow (v1_xboole_0 (k4_gate_1 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboole_0 X0) \wedge (v1_xboole_0 X1)) \Rightarrow (v1_xboole_0 (k4_gate_1 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow (\neg v1_xboole_0 (k4_gate_1 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0 X0) \Rightarrow (v1_xboole_0 (k2_gate_1 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow (\neg v1_xboole_0 (k2_gate_1 X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xboole_0 X0)\wedge(v1_xboole_0 X1))\Rightarrow(v1_xboole_0 (k11_gate_1 X2 X0 X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xboole_0 X0)\wedge(v1_xboole_0 X1))\Rightarrow(v1_xboole_0 (k11_gate_1 X0 X2 X1)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xboole_0 X0)\wedge(v1_xboole_0 X1))\Rightarrow(v1_xboole_0 (k11_gate_1 X0 X1 X2)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow(\neg v1_xboole_0 (k11_gate_1 X2 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow(\neg v1_xboole_0 (k11_gate_1 X0 X2 X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow(\neg v1_xboole_0 (k11_gate_1 X0 X1 X2)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(\neg v1_xboole_0 X2)))\Rightarrow(\neg v1_xboole_0 (k10_gate_1 X0 X1 X2)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(v1_xboole_0 X2)))\Rightarrow(v1_xboole_0 (k10_gate_1 X2 X0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(v1_xboole_0 X2)))\Rightarrow(v1_xboole_0 (k10_gate_1 X0 X2 X1)) \quad (14)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(v1_xboole_0 (k1_gate_1 X0)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(v1_xboole_0 X2)))\Rightarrow(v1_xboole_0 (k10_gate_1 X0 X1 X2)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xboole_0 X0)\wedge((v1_xboole_0 X1)\wedge(\neg v1_xboole_0 X2)))\Rightarrow(\neg v1_xboole_0 (k10_gate_1 X2 X0 X1)) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xboole_0 X0)\wedge((v1_xboole_0 X1)\wedge(\neg v1_xboole_0 X2)))\Rightarrow(\neg v1_xboole_0 (k10_gate_1 X0 X2 X1)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xboole_0 X0)\wedge((v1_xboole_0 X1)\wedge(\neg v1_xboole_0 X2)))\Rightarrow(\neg v1_xboole_0 (k10_gate_1 X0 X1 X2)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xboole_0 X0)\wedge((v1_xboole_0 X1)\wedge(v1_xboole_0 X2)))\Rightarrow(v1_xboole_0 (k10_gate_1 X0 X1 X2)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1_xboole_0 X0)\Rightarrow(v1_xboole_0 (k8_gate_1 X1 X2 X0)) \quad (21)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (22)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\neg v1_xboole_0 (k1_gate_1 X0)) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1_xboole_0 X0)\Rightarrow(v1_xboole_0 (k8_gate_1 X1 X0 X2)) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1_xboole_0 X0)\Rightarrow(v1_xboole_0 (k8_gate_1 X0 X1 X2)) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(\neg v1_xboole_0 X2)))\Rightarrow(\neg v1_xboole_0 (k8_gate_1 X0 X1 X2)) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1_xboole_0 X0)\Rightarrow(v1_xboole_0 (k7_gate_1 X0 X1)) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboole_0 X0)\wedge(v1_xboole_0 X1))\Rightarrow(\neg v1_xboole_0 (k7_gate_1 X0 X1)) \quad (28)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow(v1_xboole_0 (k6_gate_1 X0 X1)) \quad (29)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0 X0)\Rightarrow(\neg v1_xboole_0 (k6_gate_1 X0 X1)) \quad (30)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ &\forall X6.\forall X7.\forall X8.k40_gate_1 X0 X1 X2 X3 X4 X5 X6 X7 \\ &X8 = k11_gate_1 X6 X7 (k38_gate_1 X0 X1 X2 X3 X4 X5 X8) \end{aligned} \quad (31)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ &\forall X6.\forall X7.\forall X8.k39_gate_1 X0 X1 X2 X3 X4 X5 X6 X7 \\ &X8 = k10_gate_1 X6 X7 (k38_gate_1 X0 X1 X2 X3 X4 X5 X8) \end{aligned} \quad (32)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ &\forall X6.k38_gate_1 X0 X1 X2 X3 X4 X5 X6 = k11_gate_1 X4 X5 (k36_gate_1 \\ &X0 X1 X2 X3 X6) \end{aligned} \quad (33)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ &\forall X6.k37_gate_1 X0 X1 X2 X3 X4 X5 X6 = k10_gate_1 X4 X5 (k36_gate_1 \\ &X0 X1 X2 X3 X6) \end{aligned} \quad (34)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.k36_gate_1 X0 X1 X2 X3 X4 = k11_gate_1 X2 X3 (k11_gate_1 X0 X1 X4) \quad (35)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.k35_gate_1 X0 X1 X2 X3 X4 = k10_gate_1 X2 X3 (k11_gate_1 X0 X1 X4) \quad (36)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(\neg(\neg(v1_xboole_0 X0)\wedge(v1_xboole_0 X1))\wedge \\ & ((\neg(\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\wedge(k34_gate_1 X0 X1\neq k1_gate_1 \\ & k1_xboole_0))\wedge(\neg(\neg(v1_xboole_0 X0)\wedge(v1_xboole_0 X1))\wedge(\neg \\ & (\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))))\Rightarrow(k34_gate_1 X0 X1 = k1_xboole_0) \end{aligned} \quad (37)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(\neg(v1_xboole_0 \\ & X0)\wedge((v1_xboole_0 X1)\wedge((v1_xboole_0 X2)\wedge((v1_xboole_0 X3)\wedge \\ & ((v1_xboole_0 X4)\wedge(k21_gate_1 X0 X1 X2 X3 X4\neq k1_gate_1 k1_xboole_0))))))\wedge \\ & ((\neg(v1_xboole_0 X0)\wedge((v1_xboole_0 X1)\wedge((v1_xboole_0 X2)\wedge((\\ & v1_xboole_0 X3)\wedge(v1_xboole_0 X4))))))\Rightarrow(k21_gate_1 X0 X1 X2 X3 X4 = \\ & k1_xboole_0) \end{aligned} \quad (38)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(\neg(\neg v1_xboole_0 \\ & X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge \\ & ((\neg v1_xboole_0 X4)\wedge(k18_gate_1 X0 X1 X2 X3 X4\neq k1_gate_1 k1_xboole_0))))))\wedge \\ & ((\neg(\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge \\ & ((\neg v1_xboole_0 X3)\wedge(\neg v1_xboole_0 X4))))))\Rightarrow(k18_gate_1 X0 X1 X2 \\ & X3 X4 = k1_xboole_0) \end{aligned} \quad (39)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(\neg(v1_xboole_0 X0)\wedge \\ & ((v1_xboole_0 X1)\wedge((v1_xboole_0 X2)\wedge((v1_xboole_0 X3)\wedge(k17_gate_1 \\ & X0 X1 X2 X3\neq k1_gate_1 k1_xboole_0))))\wedge(\neg(v1_xboole_0 X0)\wedge \\ & (v1_xboole_0 X1)\wedge((v1_xboole_0 X2)\wedge(v1_xboole_0 X3))))\Rightarrow(k17_gate_1 \\ & X0 X1 X2 X3 = k1_xboole_0) \end{aligned} \quad (40)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(\neg(\neg v1_xboole_0 \\ & X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge \\ & (k14_gate_1 X0 X1 X2 X3\neq k1_gate_1 k1_xboole_0))))\wedge(\neg(\neg v1_xboole_0 \\ & X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge(\neg v1_xboole_0 X3))))\Rightarrow \\ & (k14_gate_1 X0 X1 X2 X3 = k1_xboole_0) \end{aligned} \quad (41)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(\neg(v1_xboole_0 X0)\wedge((v1_xboole_0 \\ & X1)\wedge((v1_xboole_0 X2)\wedge(k13_gate_1 X0 X1 X2\neq k1_gate_1 k1_xboole_0))))\wedge \\ & ((\neg(v1_xboole_0 X0)\wedge((v1_xboole_0 X1)\wedge(v1_xboole_0 X2))))\Rightarrow(\\ & k13_gate_1 X0 X1 X2 = k1_xboole_0) \end{aligned} \quad (42)$$

Assume the following.

$$\forall X0.\forall X1.k7_gate.1 X0 X1 = k7_gate.1 X1 X0 \quad (43)$$

Assume the following.

$$\forall X0.\forall X1.k6_gate.1 X0 X1 = k6_gate.1 X1 X0 \quad (44)$$

Assume the following.

$$\forall X0.\forall X1.k4_gate.1 X0 X1 = k4_gate.1 X1 X0 \quad (45)$$

Assume the following.

$$\forall X0.\forall X1.k2_gate.1 X0 X1 = k2_gate.1 X1 X0 \quad (46)$$

Theorem 1

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& \forall X6. \forall X7. \forall X8. \forall X9. \forall X10. \forall X11. \\
& \forall X12. \forall X13. \forall X14. \forall X15. \forall X16. \\
& \forall X17. \forall X18. \forall X19. \forall X20. \forall X21. \\
& \forall X22. \forall X23. \forall X24. \forall X25. \forall X26. \\
& \forall X27. \forall X28. \forall X29. \forall X30. \forall X31. \\
& \forall X32. \forall X33. \forall X34. \forall X35. \forall X36. \\
& \forall X37. \forall X38. \forall X39. \forall X40. \neg(\neg(\neg v1_xboole_0 \\
& X10) \wedge (v1_xboole_0 (k7_gate_1 X1 X2))) \wedge ((\neg(\neg v1_xboole_0 (k7_gate_1 \\
& X1 X2)) \wedge (v1_xboole_0 X10)) \wedge ((\neg(\neg v1_xboole_0 X11) \wedge (v1_xboole_0 \\
& (k6_gate_1 X1 X2))) \wedge ((\neg(\neg v1_xboole_0 (k6_gate_1 X1 X2)) \wedge (v1_xboole_0 \\
& X11)) \wedge ((\neg(\neg v1_xboole_0 X12) \wedge (v1_xboole_0 (k34_gate_1 X1 X2)))) \wedge \\
& ((\neg(\neg v1_xboole_0 (k34_gate_1 X1 X2)) \wedge (v1_xboole_0 X12)) \wedge ((\neg \\
& (\neg v1_xboole_0 X13) \wedge (v1_xboole_0 (k7_gate_1 X3 X4))) \wedge ((\neg(\neg v1_xboole_0 \\
& (k7_gate_1 X3 X4)) \wedge (v1_xboole_0 X13)) \wedge ((\neg(\neg v1_xboole_0 X14) \wedge \\
& (v1_xboole_0 (k6_gate_1 X3 X4))) \wedge ((\neg(\neg v1_xboole_0 (k6_gate_1 \\
& X3 X4)) \wedge (v1_xboole_0 X14)) \wedge ((\neg(\neg v1_xboole_0 X15) \wedge (v1_xboole_0 \\
& (k34_gate_1 X3 X4))) \wedge ((\neg(\neg v1_xboole_0 (k34_gate_1 X3 X4)) \wedge (v1_xboole_0 \\
& X15)) \wedge ((\neg(\neg v1_xboole_0 X16) \wedge (v1_xboole_0 (k7_gate_1 X5 X6))) \wedge \\
& ((\neg(\neg v1_xboole_0 (k7_gate_1 X5 X6)) \wedge (v1_xboole_0 X16)) \wedge ((\neg \\
& (\neg v1_xboole_0 X17) \wedge (v1_xboole_0 (k6_gate_1 X5 X6))) \wedge ((\neg(\neg v1_xboole_0 \\
& (k6_gate_1 X5 X6)) \wedge (v1_xboole_0 X17)) \wedge ((\neg(\neg v1_xboole_0 X18) \wedge \\
& (v1_xboole_0 (k34_gate_1 X5 X6))) \wedge ((\neg(\neg v1_xboole_0 (k34_gate_1 \\
& X5 X6)) \wedge (v1_xboole_0 X18)) \wedge ((\neg(\neg v1_xboole_0 X19) \wedge (v1_xboole_0 \\
& (k7_gate_1 X7 X8))) \wedge ((\neg(\neg v1_xboole_0 (k7_gate_1 X7 X8)) \wedge (v1_xboole_0 \\
& X19)) \wedge ((\neg(\neg v1_xboole_0 X20) \wedge (v1_xboole_0 (k6_gate_1 X7 X8))) \wedge \\
& ((\neg(\neg v1_xboole_0 (k6_gate_1 X7 X8)) \wedge (v1_xboole_0 X20)) \wedge ((\neg \\
& (\neg v1_xboole_0 X21) \wedge (v1_xboole_0 (k34_gate_1 X7 X8))) \wedge ((\neg(\neg v1_xboole_0 \\
& (k34_gate_1 X7 X8)) \wedge (v1_xboole_0 X21)) \wedge ((\neg(\neg v1_xboole_0 X22) \wedge \\
& (v1_xboole_0 (k1_gate_1 X0))) \wedge ((\neg(\neg v1_xboole_0 (k1_gate_1 X0)) \wedge \\
& (v1_xboole_0 X22)) \wedge ((\neg(\neg v1_xboole_0 X23) \wedge (v1_xboole_0 (k1_gate_1 \\
& X22))) \wedge ((\neg(\neg v1_xboole_0 (k1_gate_1 X22)) \wedge (v1_xboole_0 X23)) \wedge \\
& ((\neg(\neg v1_xboole_0 X37) \wedge (v1_xboole_0 (k4_gate_1 X23 X12))) \wedge ((\neg \\
& (\neg v1_xboole_0 (k4_gate_1 X23 X12)) \wedge (v1_xboole_0 X37)) \wedge ((\neg \\
& (\neg v1_xboole_0 X24) \wedge (v1_xboole_0 (k2_gate_1 X22 X11))) \wedge ((\neg(\neg v1_xboole_0 \\
& (k2_gate_1 X22 X11)) \wedge (v1_xboole_0 X24)) \wedge ((\neg(\neg v1_xboole_0 X25) \wedge \\
& (v1_xboole_0 (k7_gate_1 X24 X10))) \wedge ((\neg(\neg v1_xboole_0 (k7_gate_1 \\
& X24 X10)) \wedge (v1_xboole_0 X25)) \wedge ((\neg(\neg v1_xboole_0 X38) \wedge (v1_xboole_0 \\
& (k4_gate_1 X25 X15))) \wedge ((\neg(\neg v1_xboole_0 (k4_gate_1 X25 X15)) \wedge \\
& (v1_xboole_0 X38)) \wedge ((\neg(\neg v1_xboole_0 X26) \wedge (v1_xboole_0 (k2_gate_1 \\
& X10 X14))) \wedge ((\neg(\neg v1_xboole_0 (k2_gate_1 X10 X14)) \wedge (v1_xboole_0 \\
& X26)) \wedge ((\neg(\neg v1_xboole_0 X27) \wedge (v1_xboole_0 (k8_gate_1 X14 X11 \\
& X22))) \wedge ((\neg(\neg v1_xboole_0 (k8_gate_1 X14 X11 X22)) \wedge (v1_xboole_0 \\
& X27)) \wedge ((\neg(\neg v1_xboole_0 X28) \wedge (v1_xboole_0 (k13_gate_1 X26 X27 \\
& X13))) \wedge ((\neg(\neg v1_xboole_0 (k13_gate_1 X26 X27 X13)) \wedge (v1_xboole_0 \\
& X28)) \wedge ((\neg(\neg v1_xboole_0 X39) \wedge (v1_xboole_0 (k4_gate_1 X28 X18))) \wedge \\
& ((\neg(\neg v1_xboole_0 (k4_gate_1 X28 X18)) \wedge (v1_xboole_0 X39)) \wedge ((\neg \\
& (\neg v1_xboole_0 X29) \wedge (v1_xboole_0 (k2_gate_1 X13 X17))) \wedge ((\neg \\
& (\neg v1_xboole_0 (k2_gate_1 X13 X17)) \wedge (v1_xboole_0 X29)) \wedge ((\neg(\neg v1_xboole_0 \\
& X30) \wedge (v1_xboole_0 (k8_gate_1 X10 X17 X14))) \wedge ((\neg(\neg v1_xboole_0 \\
& (k8_gate_1 X10 X17 X14)) \wedge (v1_xboole_0 X30)) \wedge ((\neg(\neg v1_xboole_0 \\
& X31) \wedge (v1_xboole_0 (k14_gate_1 X17 X14 X11 X22))) \wedge ((\neg(\neg v1_xboole_0 \\
& (k14_gate_1 X17 X14 X11 X22)) \wedge (v1_xboole_0 X31)) \wedge ((\neg(\neg v1_xboole_0 \\
& X32) \wedge (v1_xboole_0 (k17_gate_1 X29 X30 X31 X16))) \wedge ((\neg(\neg v1_xboole_0 \\
& (k17_gate_1 X29 X30 X31 X16)) \wedge (v1_xboole_0 X32)) \wedge ((\neg(\neg v1_xboole_0 \\
& X40) \wedge (v1_xboole_0 (k4_gate_1 X32 X21))) \wedge ((\neg(\neg v1_xboole_0 (k4_gate_1 \\
& X32 X21)) \wedge (v1_xboole_0 X40)) \wedge ((\neg(\neg v1_xboole_0 X33) \wedge (v1_xboole_0 \\
& (k2_gate_1 X16 X20))) \wedge ((\neg(\neg v1_xboole_0 (k2_gate_1 X16 X20)) \wedge \\
& (v1_xboole_0 X33)) \wedge ((\neg(\neg v1_xboole_0 X34) \wedge (v1_xboole_0 (k8_gate_1
\end{aligned}$$