t1_gate_2 (TMQDLbVYB-WmrSh7r62PoiEGxY4JcSDMXYKS)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k8\_gate\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_gate\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_gate\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_gate\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_gate\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(\neg(\neg v1\_xboole\_0\ (k4\_gate\_1\ X0\ X1))\wedge((\neg(\neg v1\_xboole\_0\ X0)\wedge(v1\_xboole\_0\ X1))\wedge(\neg(v1\_xboole\_0\ X0)\wedge(\neg v1\_xboole\_0\ X1))))\wedge(\neg(((\neg v1\_xboole\_0\ X0)\wedge(v1\_xboole\_0\ X1))\vee((v1\_xboole\_0\ X0)\wedge(\neg v1\_xboole\_0\ X1)))\wedge(v1\_xboole\_0\ (k4\_gate\_1\ X0\ X1))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(\neg(\neg v1\_xboole\_0\ (k3\_gate\_1\ X0\ X1))\wedge((v1\_xboole\_0\ X0)\wedge(v1\_xboole\_0\ X1)))\wedge(\neg(\neg(v1\_xboole\_0\ X0)\wedge(v1\_xboole\_0\ X1))\wedge(v1\_xboole\_0\ (k3\_gate\_1\ X0\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ (k2\_gate\_1\ X0\ X1))\Leftrightarrow((\neg v1\_xboole\_0\ X0)\wedge(\neg v1\_xboole\_0\ X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v1\_xboole\_0\ (k8\_gate\_1\ X0\ X1\ X2))\Leftrightarrow((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(\neg v1\_xboole\_0\ X2))) \tag{4}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(v1\_xboole\_0\ (k1\_gate\_1\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\neg v1\_xboole\_0\ (k1\_gate\_1\ X0)) \tag{6}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.$$
$$\forall X6.\forall X7.\forall X8.\forall X9.\forall X10.\forall X11.$$
$$\forall X12.\forall X13.\forall X14.\forall X15.\forall X16.$$
$$\forall X17.\forall X18.\forall X19.\forall X20.\forall X21.$$
$$\neg(\neg(\neg v1\_xboole\_0\ X0)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ (k1\_gate\_1\ X17)\ (k1\_gate\_1\ X16))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ (k1\_gate\_1\ X17)\ (k1\_gate\_1\ X16)))\wedge(v1\_xboole\_0\ X0))\wedge((\neg(\neg v1\_xboole\_0\ X1)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ (k1\_gate\_1\ X17)\ X16)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ (k1\_gate\_1\ X17)\ X16))\wedge(v1\_xboole\_0\ X1))\wedge((\neg(\neg v1\_xboole\_0\ X2)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ X17\ (k1\_gate\_1\ X16))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ X17\ (k1\_gate\_1\ X16)))\wedge(v1\_xboole\_0\ X2))\wedge((\neg(\neg v1\_xboole\_0\ X3)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ X17\ X16)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X18)\ X17\ X16))\wedge(v1\_xboole\_0\ X3))\wedge((\neg(\neg v1\_xboole\_0\ X4)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X18\ (k1\_gate\_1\ X17)\ (k1\_gate\_1\ X16))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X18\ (k1\_gate\_1\ X17)\ (k1\_gate\_1\ X16)))\wedge(v1\_xboole\_0\ X4))\wedge((\neg(\neg v1\_xboole\_0\ X5)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X18\ (k1\_gate\_1\ X17)\ X16)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X18\ (k1\_gate\_1\ X17)\ X16))\wedge(v1\_xboole\_0\ X5))\wedge((\neg(\neg v1\_xboole\_0\ X6)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X18\ X17\ (k1\_gate\_1\ X16))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X18\ X17\ (k1\_gate\_1\ X16)))\wedge(v1\_xboole\_0\ X6))\wedge((\neg(\neg v1\_xboole\_0\ X7)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X18\ X17\ X16)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X18\ X17\ X16))\wedge(v1\_xboole\_0\ X7))\wedge((\neg(\neg v1\_xboole\_0\ X8)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ (k1\_gate\_1\ X20)\ (k1\_gate\_1\ X19))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ (k1\_gate\_1\ X20)\ (k1\_gate\_1\ X19)))\wedge(v1\_xboole\_0\ X8))\wedge((\neg(\neg v1\_xboole\_0\ X9)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ (k1\_gate\_1\ X20)\ X19)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ (k1\_gate\_1\ X20)\ X19))\wedge(v1\_xboole\_0\ X9))\wedge((\neg(\neg v1\_xboole\_0\ X10)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ X20\ (k1\_gate\_1\ X19))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ X20\ (k1\_gate\_1\ X19)))\wedge(v1\_xboole\_0\ X10))\wedge((\neg(\neg v1\_xboole\_0\ X11)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ X20\ X19)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ (k1\_gate\_1\ X21)\ X20\ X19))\wedge(v1\_xboole\_0\ X11))\wedge((\neg(\neg v1\_xboole\_0\ X12)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X21\ (k1\_gate\_1\ X20)\ (k1\_gate\_1\ X19))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X21\ (k1\_gate\_1\ X20)\ (k1\_gate\_1\ X19)))\wedge(v1\_xboole\_0\ X12))\wedge((\neg(\neg v1\_xboole\_0\ X13)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X21\ (k1\_gate\_1\ X20)\ X19)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X21\ (k1\_gate\_1\ X20)\ X19))\wedge(v1\_xboole\_0\ X13))\wedge((\neg(\neg v1\_xboole\_0\ X14)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X21\ X20\ (k1\_gate\_1\ X19))))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X21\ X20\ (k1\_gate\_1\ X19)))\wedge(v1\_xboole\_0\ X14))\wedge((\neg(\neg v1\_xboole\_0\ X15)\wedge(v1\_xboole\_0\ (k8\_gate\_1\ X21\ X20\ X19)))\wedge((\neg(\neg v1\_xboole\_0\ (k8\_gate\_1\ X21\ X20\ X19))\wedge(v1\_xboole\_0\ X15))\wedge((\neg(\neg v1\_xboole\_0\ X19)\wedge(v1\_xboole\_0\ (k1\_gate\_1\ X16)))\wedge((\neg(\neg v1\_xboole\_0\ (k1\_gate\_1\ X16))\wedge(v1\_xboole\_0\ X19))\wedge((\neg(\neg v1\_xboole\_0\ X20)\wedge(v1\_xboole\_0\ (k4\_gate\_1\ X16\ X17)))\wedge((\neg(\neg v1\_xboole\_0\ (k4\_gate\_1\ X16\ X17))\wedge(v1\_xboole\_0\ X20))\wedge((\neg(\neg v1\_xboole\_0\ X21)\wedge(v1\_xboole\_0\ (k3\_gate\_1\ (k2\_gate\_1\ X18\ (k1\_gate\_1\ X16))\ (k2\_gate\_1\ X16\ (k4\_gate\_1\ X17\ X18)))))\wedge((\neg(\neg v1\_xboole\_0\ (k3\_gate\_1\ (k2\_gate\_1\ X18\ (k1\_gate\_1\ X16))\ (k2\_gate\_1\ X16\ (k4\_gate\_1\ X17\ X18))))\wedge(v1\_xboole\_0\ X21))\wedge(\neg(\neg(\neg v1\_xboole\_0\ X9)\wedge(v1\_xboole\_0\ X0))\wedge((\neg(\neg v1\_xboole\_0\ X0)\wedge(v1\_xboole\_0\ X9))\wedge((\neg(\neg v1\_xboole\_0\ X10)\wedge(v1\_xboole\_0\ X1))\wedge((\neg(\neg v1\_xboole\_0\ X1)\wedge(v1\_xboole\_0\ X10))\wedge((\neg(\neg v1\_xboole\_0\ X11)\wedge(v1\_xboole\_0\ X2))\wedge((\neg(\neg v1\_xboole\_0\ X2)\wedge(v1\_xboole\_0\ X11))\wedge((\neg(\neg v1\_xboole\_0\ X12)\wedge(v1\_xboole\_0\ X3))\wedge((\neg(\neg v1\_xboole\_0\ X3)\wedge(v1\_xboole\_0\ X12))\wedge((\neg(\neg v1\_xboole\_0\ X13)\wedge(v1\_xboole\_0\ X4))\wedge((\neg(\neg v1\_xboole\_0\ X4)\wedge(v1\_xboole\_0\ X13))\wedge((\neg(\neg v1\_xboole\_0\ X14)\wedge(v1\_xboole\_0\ X5))\wedge((\neg(\neg v1\_xboole\_0\ X5)\wedge(v1\_xboole\_0\ X14))\wedge((\neg(\neg v1\_xboole\_0\ X15)\wedge(v1\_xboole\_0\ X6))\wedge$$