

t12_normform (TMdbeBNqibMNLxFnYszmMN- hdwd6gc7ogpPs)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_finsub_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k2_zfmisc_1 X0 X1)) \Rightarrow (((r1_normform \\ & X0 X1 X2 X3) \wedge (r1_normform X0 X1 X4 X3)) \Rightarrow (r1_normform X0 X1 (k1_normform \\ & X0 X1 X2 X4) X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k2_zfmisc_1 X0 X1)) \Rightarrow (((r1_normform \\ & X0 X1 X2 X3) \wedge (r1_normform X0 X1 X3 X4)) \Rightarrow (r1_normform X0 X1 X2 X4)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)) \Rightarrow ((r1_normform X0 X1 X2 (k1_normform X0 X1 X2 X3)) \wedge (r1_normform \\ & X0 X1 X3 (k1_normform X0 X1 X2 X3)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0)\wedge(v4_finsub_1 X0))\wedge(((\neg v1_xboole_0 X1)\wedge(v4_finsub_1 X1))\wedge \\ & ((m1_subset_1 X2 (k2_zfmisc_1 X0 X1))\wedge(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1))))))\Rightarrow(m1_subset_1 (k1_normform X0 X1 X2 X3) (k2_zfmisc_1 \\ & X0 X1)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0)\wedge(v4_finsub_1 X0))\wedge(((\neg v1_xboole_0 X1)\wedge(v4_finsub_1 X1))\wedge \\ & ((m1_subset_1 X2 (k2_zfmisc_1 X0 X1))\wedge(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1))))))\Rightarrow(k1_normform X0 X1 X2 X3 = k1_normform X0 X1 X3 X2) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0)\wedge(v4_finsub_1 X0))\Rightarrow(\forall X1. \\ & ((\neg v1_xboole_0 X1)\wedge(v4_finsub_1 X1))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1))\Rightarrow(\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1))\Rightarrow(\forall X4.(m1_subset_1 X4 (k2_zfmisc_1 X0 X1))\Rightarrow((r1_normform \\ & X0 X1 X2 X3)\Rightarrow((r1_normform X0 X1 (k1_normform X0 X1 X4 X2) (k1_normform \\ & X0 X1 X4 X3))\wedge(r1_normform X0 X1 (k1_normform X0 X1 X2 X4) (k1_normform \\ & X0 X1 X3 X4)))))))))) \end{aligned}$$