

t14_normform (TMQnWABYeVX- PVec6wBeLEdmxFfaBxoxaNXJ)

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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 $r1_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)) \Rightarrow (k1_normform X0 X1 (k3_normform X0 X1 X2 X3) X3 = k1_normform \\ & X0 X1 X2 X3)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k2_zfmisc_1 X0 X1)) \Rightarrow ((r1_normform \\ & X0 X1 X2 X3) \Rightarrow ((r1_normform X0 X1 (k1_normform X0 X1 X4 X2) (k1_normform \\ & X0 X1 X4 X3)) \wedge (r1_normform X0 X1 (k1_normform X0 X1 X2 X4) (k1_normform \\ & X0 X1 X3 X4)))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)) \Rightarrow ((r1_normform X0 X1 X2 (k1_normform X0 X1 X2 X3)) \wedge (r1_normform \\ & X0 X1 X3 (k1_normform X0 X1 X2 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0) \wedge (v4_finsub_1 X0)) \wedge (((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \wedge \\ & ((m1_subset_1 X2 (k2_zfmisc_1 X0 X1)) \wedge (m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)))))) \Rightarrow (m1_subset_1 (k3_normform X0 X1 X2 X3) (k2_zfmisc_1 \\ & X0 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0) \wedge (v4_finsub_1 X0)) \wedge (((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \wedge \\ & ((m1_subset_1 X2 (k2_zfmisc_1 X0 X1)) \wedge (m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)))))) \Rightarrow (m1_subset_1 (k1_normform X0 X1 X2 X3) (k2_zfmisc_1 \\ & X0 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 \\ & X0) \wedge (v4_finsub_1 X0)) \wedge (((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \wedge \\ & ((m1_subset_1 X2 (k2_zfmisc_1 X0 X1)) \wedge (m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)))))) \Rightarrow (k1_normform X0 X1 X2 X3 = k1_normform X0 X1 X3 X2) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v4_finsub_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v4_finsub_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k2_zfmisc_1 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 \\ & X0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k2_zfmisc_1 X0 X1)) \Rightarrow ((r1_normform \\ & X0 X1 (k3_normform X0 X1 X2 X3) X4) \Rightarrow (r1_normform X0 X1 X2 (k1_normform \\ & X0 X1 X3 X4)))))) \end{aligned}$$