

l25_normform

(TML2U92YYPusLEqyd3y8BQW4Qn1XMCBTSBup)

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Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_normform : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. 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 $k1_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k3_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 (k5_finsub_1 X0)) \wedge (v4_finsub_1 (k5_finsub_1 X0)) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_funct_1 (k5_normform X0)) \wedge ((v1_funct_2 (k5_normform \\ & X0) (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)) \\ & (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0))) (k2_zfmisc_1 \\ & (k5_finsub_1 X0) (k5_finsub_1 X0))) \wedge (m1_subset_1 (k5_normform \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 \\ & X0) (k5_finsub_1 X0)) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 \\ & X0))) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.v4_finsub_1 (k5_finsub_1 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (m1_subset_1 (k3_binop_1 X0 X1 X2 X3) X0) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)) (k2_zfmisc_1 \\ & (k5_finsub_1 X0) (k5_finsub_1 X0))) (k2_zfmisc_1 (k5_finsub_1 \\ & X0) (k5_finsub_1 X0))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)) \\ & (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0))) (k2_zfmisc_1 \\ & (k5_finsub_1 X0) (k5_finsub_1 X0)))))) \Rightarrow ((X1 = k5_normform X0) \Leftrightarrow \\ & (\forall X2.(m1_subset_1 X2 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 \\ & X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k2_zfmisc_1 (k5_finsub_1 \\ & X0) (k5_finsub_1 X0))) \Rightarrow (k5_binop_1 (k2_zfmisc_1 (k5_finsub_1 \\ & X0) (k5_finsub_1 X0)) X1 X2 X3 = k1_normform (k5_finsub_1 X0) (k5_finsub_1 \\ & X0) X2 X3)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow ((v2_binop_1 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 \\ & X0) \Rightarrow (\forall X3.(m1_subset_1 X3 X0) \Rightarrow (\forall X4.(m1_subset_1 \\ & X4 X0) \Rightarrow (k3_binop_1 X0 X1 X2 (k3_binop_1 X0 X1 X3 X4) = k3_binop_1 X0 \\ & X1 (k3_binop_1 X0 X1 X2 X3) X4)))))) \end{aligned} \quad (9)$$

Theorem 1

$$\forall X0.v2_binop_1 (k5_normform X0) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0))$$