

l103_modelc_1 (TMK-
pAx24LVxvxahkeCG1r1kxXa2dDUHgrM)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k30_modelc_1 : \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k43_modelc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r8_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0 : \iota \Rightarrow \iota \Rightarrow \iota. \forall X1. \forall X2. ((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 (k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1)))) \Rightarrow (\forall X3. ((v1_funct_1 \\ & X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1)))) \Rightarrow ((\forall X4. (m1_subset_1 \\ & X4 X1) \Rightarrow (\forall X5. (m1_subset_1 X5 X1) \Rightarrow (k5_binop_1 X1 X2 X4 X5 = \\ & X0 X4 X5))) \wedge (\forall X4. (m1_subset_1 X4 X1) \Rightarrow (\forall X5. (m1_subset_1 \\ & X5 X1) \Rightarrow (k5_binop_1 X1 X3 X4 X5 = X0 X4 X5)))) \Rightarrow (r8_binop_1 X1 X1 X1 X2 \\ & X3))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\neg v1_xboole_0 (k30_modelc_1 X0)) \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_partfun1 X1 X0) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))) \Rightarrow (\forall X2. \\ & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 (k30_modelc_1 \\ X0) (k30_modelc_1 X0)) (k30_modelc_1 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 (k30_modelc_1 X0) (k30_modelc_1 X0)) \\ & (k30_modelc_1 X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\ X3 (k2_zfmisc_1 (k30_modelc_1 X0) (k30_modelc_1 X0)) (k30_modelc_1 \\ X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & (k30_modelc_1 X0) (k30_modelc_1 X0)) (k30_modelc_1 X0)))))) \Rightarrow \\ & (((\forall X4.\forall X5.((X4 \in k30_modelc_1 X0) \wedge (X5 \in k30_modelc_1 \\ X0)) \Rightarrow (k1_binop_1 X2 X4 X5 = k43_modelc_1 X0 X1 X4 X5)) \wedge (\forall X4. \\ \forall X5.((X4 \in k30_modelc_1 X0) \wedge (X5 \in k30_modelc_1 X0)) \Rightarrow (k1_binop_1 \\ X3 X4 X5 = k43_modelc_1 X0 X1 X4 X5))) \Rightarrow (r8_binop_1 (k30_modelc_1 \\ X0) (k30_modelc_1 X0) (k30_modelc_1 X0) X2 X3)))) \end{aligned}$$