

t4_binop_1

(TMa44DRD3XxBbRdPyUttS4WdqKX5QAn9QNS)

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Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 X0) \Rightarrow ((r3_binop_1 X0 \\ & X2 X1) \Leftrightarrow (\forall X3. (m1_subset_1 X3 X0) \Rightarrow ((k3_binop_1 X0 X1 X2 X3 = \\ & X3) \wedge (k3_binop_1 X0 X1 X3 X2 = X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow ((v1_binop_1 X1 X0) \Leftrightarrow (\forall X2. (m1_subset_1 X2 \\ & X0) \Rightarrow (\forall X3. (m1_subset_1 X3 X0) \Rightarrow (k3_binop_1 X0 X1 X2 X3 = k3_binop_1 \\ & X0 X1 X3 X2)))))) \end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 X0) \Rightarrow ((v1_binop_1 X1 \\ & X0) \Rightarrow ((r3_binop_1 X0 X2 X1) \Leftrightarrow (\forall X3. (m1_subset_1 X3 X0) \Rightarrow (k3_binop_1 \\ & X0 X1 X2 X3 = X3)))))) \end{aligned}$$